BERRY TEST SETS

CALIBRATION TEST PROCEDURE

FOR BERRY MODEL: 314AL5 TEST SET

October 1992

99-314-966-MAN

CALIBRATION TEST PROCEDURE

FOR BERRY MODEL: 314AL5 TEST SET

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Berry Test Sets, Inc.
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New London, MN 56273
612-354-5825

The following calibration test procedures are written to thoroughly check the function of the unit to be sure it is within specifications.

When testing a unit that has an option in the lid, be sure to test the base unit first then proceed to test the option in the lid. For example, if your testing a 966AL5 unit, test the 966A first then the Drop and Insert in the lid.

When going through the procedure, always follow it in the steps it is written. If not and a step is skipped saying to select a different selection, it will throw off the rest of the procedure.

Also note when checking over unit to also check over the physical appearance including any dents in case that could be denting into the power supplies, or the PCB boards. Also check the tightness of screws holding down the power supplies, fan and rubber feet.

314AL5 DROP AND INSERT CALIBRATION TEST PROCEDURE

1.0 OBJECTIVE

This procedure provides all the necessary information to perform a calibration test on a Berry Test Set 314AL5 Drop and Insert. If any of the following tests fail, contact our service department.

Note: This procedure is meant to be followed in the manner it is written.

2.0 EQUIPMENT REQUIRED (or equivalent)

2.1 DS-1 PCM SIMULATOR
2.2 DS-1 PCM LINE & CHANNEL MONITOR (LCM)
2.3 FLUKE 8050A digital volt meter with a 600 ohm load or any Transmission Test Set (TTS) with a receive impedance of 600 ohm.
2.4 VF Transmission Test Set with an output of 1KHz at 0.00dB with 600 ohm impedance.
2.5 Berry 966AL5 Trunk Signaling Analyzer (with in calibration).

3.0 INITIAL SET UP

3.1 Set 314AL5 power to ON.
3.2 Set Drop & Insert switches to: TERM, MON, SUPERVISION A and B bits to 0, EXTERNAL, D3/D4, TRANSMIT A/B Bit to 0.
3.3 Set TTS to measure frequency and level.
3.4 Set 314A to: TRUNK TYPE to E&M ORIGINATING, PULSING to DP, and FUNCTION to AUTO SEND.

4.0 TEST RECEIVE

4.1 Inject a known good PCM signal. Note Serial Label in the front of the unit, if serial label has the letters 'AFB' typed on it the input signal can range from 3 volts base to peak down to -24dB. If not the range is from 3 volts base to peak down to -10dB. After injecting signal all ALARM LEDs should go out.
4.2 If possible, inject known BPV, FRM, RMT (YELLOW), and SB alarms and note corresponding LED illuminates.
4.3 Turn on the A & B RECEIVE SUPERVISION LEDs and note corresponding LED illuminates.
4.4 Set PCM IN to BRDG, and note all ALARM LEDs should still be out. Set PCM IN back to TERM.
4.5 Connect TTS or meter to EXTERNAL T1R1 jack.

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4.6 Send 1000Hz at 0.0dB on PCM.
4.7 Set DROP AND INSERT FORMAT and CHANNEL to that of the PCM signal and note meter indicates 1000Hz ± 1Hz at 0.0dB ± .1dB.
4.8 Set TEST SET to INTERNAL.
4.9 314A DBM meter will display 0.0dB ± .2dB.
4.10 Set TEST SET to EXTERNAL.

5.0 TEST XMIT

5.1 Plug a 310 cord from XMIT jack to PCM IN jack.
5.2 Set both TRANSMIT A/B BIT switches to 1, and note RECEIVE A and B LEDs illuminate. Set TRANSMIT A/B BIT switches to 0.

6.0 TEST PCM OUT

6.1 Leave 310 cord connected from XMIT to PCM IN.
6.2 Connect a 310 cord from PCM OUT to a PCM LINE and CHANNEL MONITOR. Set both units to the same FORMAT and CHANNEL.
6.3 Set DROP and INSERT MODE to DROP & INSERT and both SUPERVISION BITS to 1. Verify LCM RECEIVE A/B BITS are high (RED).
6.4 Set TTS output at 1000Hz at 0.0dB, 600 ohm impedance.
6.5 Connect 310 cord from TTS to EXTERNAL TR jack.
6.6 Verify LCM displays 1000Hz ± 1Hz at 0.0dB ± .2dB.
6.7 Switch thru the FORMAT and CHANNELS 1 thru 24 and verify LCM displays frequency and level at each setting.

7.0 TEST DROP AND INSERT TRANSMISSION

7.1 Connect PCM OUT to a BERRY 966AL5, Drop and Insert PCM IN jack or equivalent test set that converts and displays PCM to analog, verify all ALARM LEDs are out.
7.2 Set 966AL5 DROP and INSERT to TERM, MON, INTERNAL, same FORMAT and CHANNEL, and all A/B BIT switches to 0.
7.3 Set 966A TRUNK TYPE to E&M TERMINATING, FUNCTION to SIMULATE WINK, DISPLAY to BOTH, MODE to NORM, RESET to AUTO.
7.4 On 314A enter DIAL PULSE digits 1 thru 7 and MF digits KP, 0 thru 9, ST.
7.5 Go OFF HOOK on 314AL5 and verify both DP and MF records display on 966AL5 and call completion is heard. Set 314 to ON HOOK.

7.6 Set DROP and INSERT TEST SET to EXTERNAL and plug a 310 cord from EXTERNAL TR, E&M jacks to 314A TR, E&M jacks.

7.7 Go OFF HOOK on 314AL5 and verify both DP & MF records display on 966AL5 and call completion tone is heard. Set 314AL5 to ON HOOK.

8.0 TEST: RECEIVE A/B INTERFACE

On the front panel of the Drop & Insert exists a jack labeled "REC A/B". This is for recording the status of the SUPERVISION BITS onto a device like a strip chart recorder.

Connect a power supply that has been set for 2.0 volts DC between ground (sleeve will work as a ground) and tip on the REC A/B jack (make sure negative on the power supply is connected to ground). Put a current meter in series with this circuit.

Leave 310 cord connected from XMIT to PCM IN.

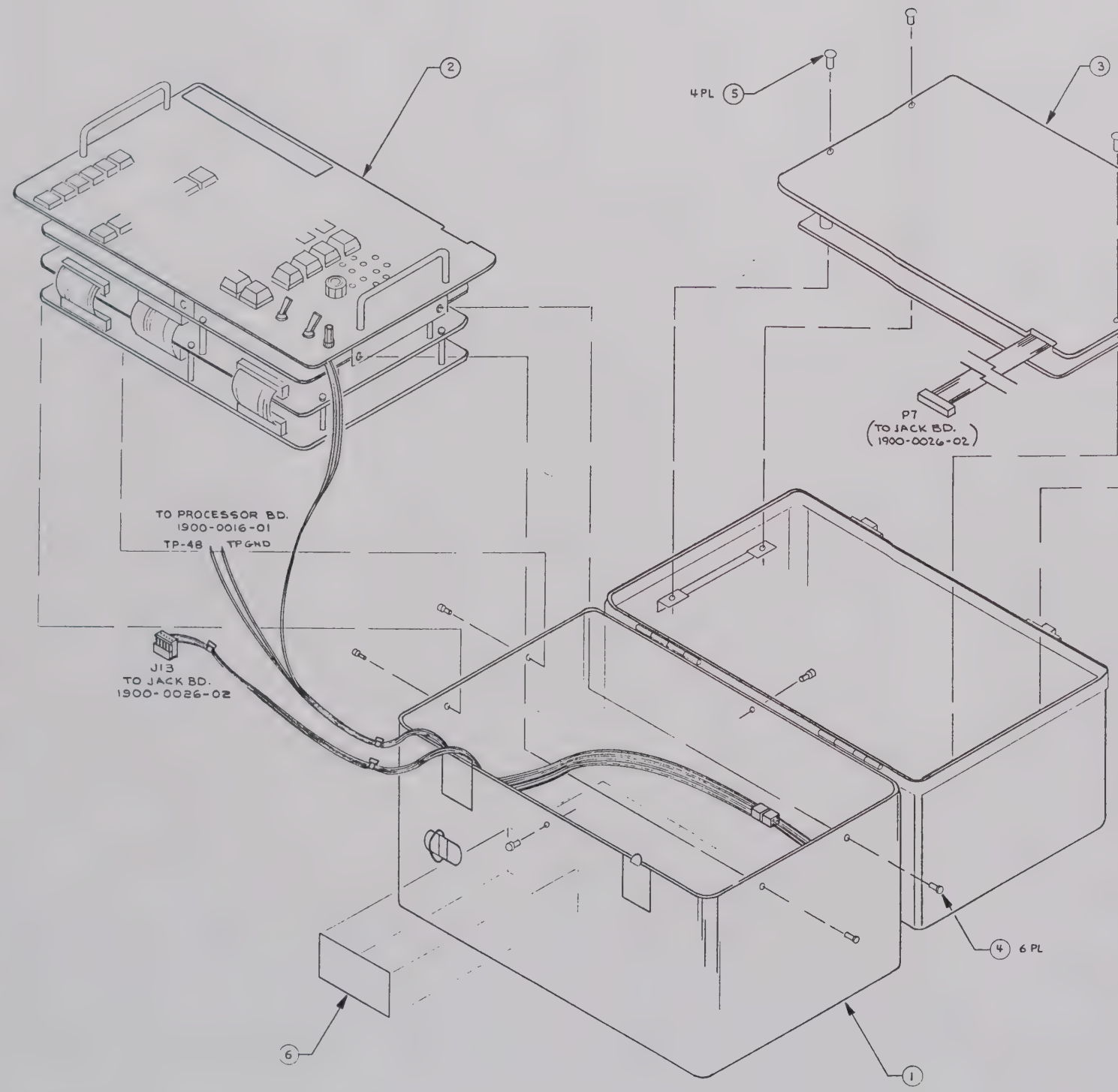
8.1 Turn the transmit A button to one and the current meter should now read 27mA +\- 5mA. Turn the transmit A button back to zero and verify 0mA +\- 2mA is now flowing. Now turn the transmit B button to one and verify no change in the current meter. Put the B button back to zero.

Unhook the lead going to tip and connect it to ring.

8.2 Turn the transmit B button to one and the current meter should now read 27mA +\- 5mA. Turn the transmit B button back to zero and verify 0mA +\- 2mA is now flowing. Now turn the transmit A button to one and verify no change in the current meter. Put the A button back to zero.

This completes the 314AL5 DROP and INSERT CALIBRATION TEST PROCEDURE.

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE	7-29-86	



1. FOR WIRING DIAGRAM SEE DWG 3004-0104-01

NOTES: UNLESS OTHERWISE SPECIFIED

FIND NO.	QTY REQ	CODE IDENT	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MFG NO.

LIST OF MATERIAL OR PARTS LIST

FINAL		314AL5	1
NEXT ASSY	QTY	USED ON	QTY
APPLICATION			

MATERIAL: SEE B/M

FINISH: ———

TOLERANCES (UNLESS OTHERWISE NOTED): US — XX ±; XXX ±; ANGLES ±. METRIC — XX ±; XXX ±.

SCALE: DO NOT SCALE DRAWING

SIGN-OFF BY	INITIAL	DATE
DRAFTSPERSON	RS	7-86
DRAFTING CHECKER		
ENGINEER APPROVAL		7/10/86
PROJECT MANAGER		
DRAFTING MANAGER		
ENGINEERING MANAGER		7/10/86

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BERRY ELECTRONICS

DRAWING TITLE: ASS'Y, TRUNK TEST SET / DROP AND INSERT 314AL5

D — DRAWING NO. 3000-0104-01 — REV A

SHEET 1 OF 1

3000-0104-01 REV A

THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING				A PROD. REL	7/29/86		7/21/86				
FIELD USE INCH / MM				B ECO 215	1/5/87		1/9/87				
LOCAL AND GENERAL NOTE USE INCH / MM											

KEY BOARD ASSY
1900-0007-01

INTERFACE ASSY.
1900-0008-01

PROCESSOR ASSY
1900-0016-01

J1 J2 J3 J4 J6 J7

J2 P2 — J9 P9 GND START

DROP & INSERT ASSY
3000-0103-01
J7 P7

FRONT PANEL ASSY
3000-0010-01

SPEAKER

BLK RED

P11 J11

JACKBOARD ASSY
1900-0026-02
J12 P12

P5 J5

-48V	1
NC	2
GND	3
GND	4
BOT HDST SLV	5
BOT HDST TIP	6
TOP HDST SLV	7
TOP HDST TIP	8
T1R1 TIP	9
T1R1 CNTRL 1	10
T1R1 CNTRL 2	11
T1R1 RING	12
REMOTE RING	13
REMOTE TIP	14
E & M TIP	15
E & M RING	16
TR RING	17
TR TIP	18

GND
-48V TIP

E1 (SOLDER LUG) FRONT PANEL

J13 P13

N/C

YEL GRN ORN BRN

J1 P1

J5 A/C IN — L N E

E1 SOLDER LUG POWER SUPPLY

GRN WHT BLK

J2-2 P2-2

SW1 (COM) 1 2 (ON)

P2-1 J2-1

RED

F1 1A 250V

BLK GRN

TR1 5 1 3 2 4 — A AT A B BT B

YEL

BLK PS1

5V 12V

-OUT +OUT -OUT COM +OUT

GRN YEL BRN ORN

15Ω, 2W R1

BLK YEL

FAN B1

TR2 1 3 2 4

PS2 (-OUT) (48V) (+OUT)

BLK RED

J2-3 J2-4

P2-3 P2-4

USED ON MODEL 314 ALS

MATERIAL	TOLERANCES UNLESS OTHERWISE NOTED:	SIGN-OFF BY	INITIAL	DATE
FINISH	U.S. / METRIC	DRAFTSPERSON	RS	7/21/86
	XX ± — / XX ± —	DRAFTING CHECKER	EHL	7/21/86
	XXX ± — / XXX ± —	ENGINEER APPROVAL		7/22/86
	ANGLES ± — / —	PROJECT MANAGER		8/19/86
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		ENGINEERING MANAGER		

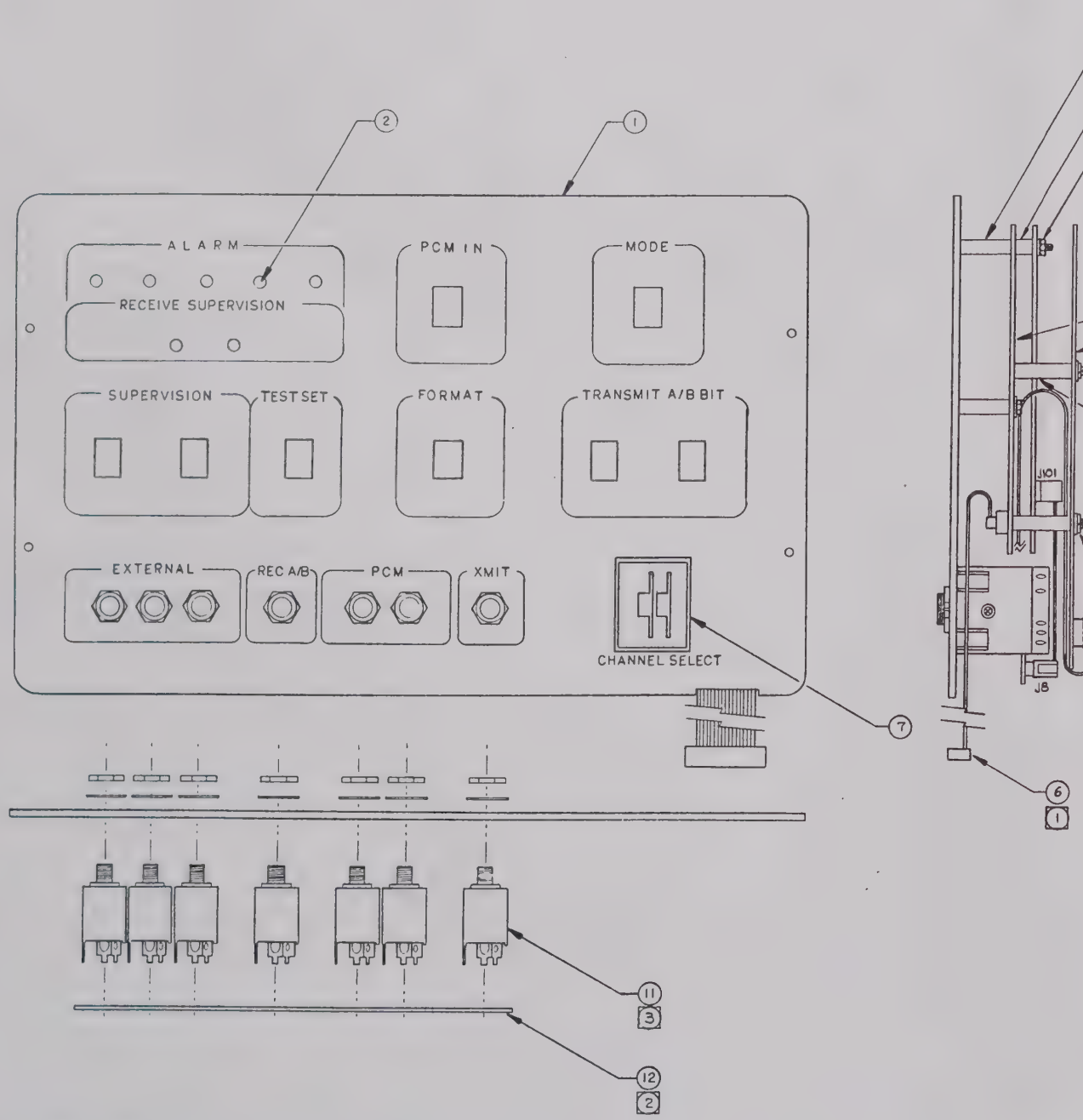
BERRY ELECTRONICS

TITLE PART BASIC: WIRING DIAGRAM
PART DESCRIPTION: TRUNK TEST SET 314ALS

D P/N 3004-0104-01

INCH 0 1 2 3 4 5 6
MM 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE.	7-17-86	
	B	CHANGED PER ECO 275.	11-1-88	KAC
	C	CHANGED PER ECO 02-89-86. STANDOFFS (ITEM 5) WERE 1 IN., NOW 7/8 IN.		KAC
	D	ADDED DS-1 F/E BD PER ECO 02-92-65	3-11-92	



5. SOLDER LEADS 3-6 TO J13 AND 1 & 2 TO S1 ON CIRCUIT SIDE OF KEYBOARD (ITEM 4) AS SHOWN PRIOR TO ASSY OF DS-1 ANALOG BD. (ITEM 22)

4. INSTALL RIBBON CABLE ASSY (ITEM 21) TO KEYBOARD (ITEM 4) PRIOR TO ASSY.

3. HARDWARE FURNISHED WITH JACKS.

2. USING PC B. AS REFERENCE, POSITION JACKS (ITEM 11) INTO BOARD (ITEM 12). DO NOT SOLDER AT THIS TIME.
   INSTALL JACKS AND JACK BOARD TO REAR OF PANEL (ITEM 1).
   INSTALL JACK WASHERS AND NUTS, AND TIGHTEN AS REQUIRED.
   CAUTION: JACKS TO BE TORQUED TO 6 LBS. MAXIMUM.
   AFTER ALL JACKS ARE SECURED TO FRONT PANEL, SOLDER TO BOARD ASSEMBLY, BEING SURE BOARD ASSEMBLY IS SEATED ON JACK PINS.

1. INSTALL RIBBON CABLE ASSY (ITEM 6) TO KEYBOARD (ITEM 4) PRIOR TO ASSEMBLY. NOTICE POSITION OF CABLE TO BOARD.

NOTES: UNLESS OTHERWISE SPECIFIED:

3000-0101-02	1	966 RLS	1
3000-0101-01	1	966 RLS	1
3000-0104-01	1	314 ALS	1
NEXT ASSY	QTY	USED ON	QTY
APPLICATION			

FIND NO.	QTY REQ	CODE IDENT	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MFG NO.

LIST OF MATERIAL OR PARTS LIST

MATERIAL: SEE B/M

FINISH: ____

TOLERANCES (UNLESS OTHERWISE NOTED): U.S. / METRIC
XX ± / XX ±
XXX ± / XXX ±
ANGLES

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SCALE | : | (DO NOT SCALE DRAWING)

	SIGN OFF BY	INITIAL	DATE
DRAFTSPERSON	RS		7-18-86
DRAFTING CHECKER			7/21/86
ENGINEER APPROVAL			7/21/86
PROJECT MANAGER			7/19/92
DRAFTING MANAGER			7/21/86
ENGINEERING MANAGER			7/21/86

BERRY ELECTRONICS

DRAWING TITLE: ASSY, FRONT PANEL, DROP AND INSERT

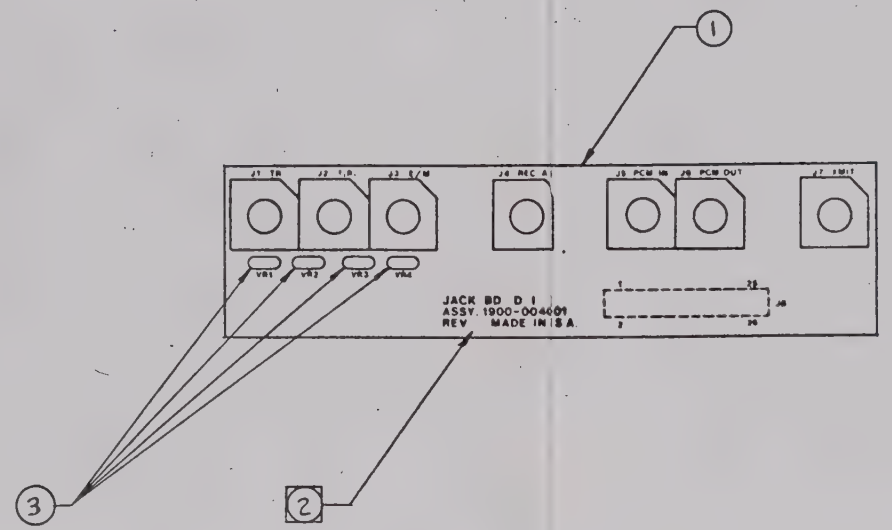
D | DRAWING NO. 3000-0103-01 | REV D

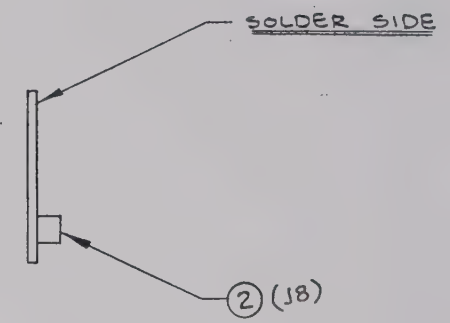
SHEET 1 OF 1

REV D

3000-0103-01

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE	7-21-86	





3 FOR SCHEMATIC SEE 1904-0040-01

[2] RUBBER STAMP OR SILKSCREEN LATEST REV.

1. J1 - J7 ARE NOT TO BE INSTALLED AT THIS LEVEL

NOTES: UNLESS OTHERWISE SPECIFIED

FIND NO.	QTY REQ	CODE IDENT	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MFG NO.
3000-0103-01	1	966ALS	1		
3000-0103-01	1	314ALS	1		
NEXT ASSY	QTY	USED ON	QTY		

APPLICATION

LIST OF MATERIAL OR PARTS LIST

MATERIAL: SEE B/M

FINISH:

TOLERANCES UNLESS OTHERWISE NOTED — U.S.: XX ± —, XXX ± —, ANGLES ± —; METRIC: XX ± —, XXX ± —

SCALE 1/1 DO NOT SCALE DRAWING

SIGN-OFF BY	INITIAL	DATE
DRAFTSPERSON	VICKY	5/30/86
DRAFTING CHECKER	EHL	7/21/86
ENGINEER APPROVAL		9/ /86
PROJECT MANAGER		8/19/86
DRAFTING MANAGER	EHL	7/22/86
ENGINEERING MANAGER		9/10/86

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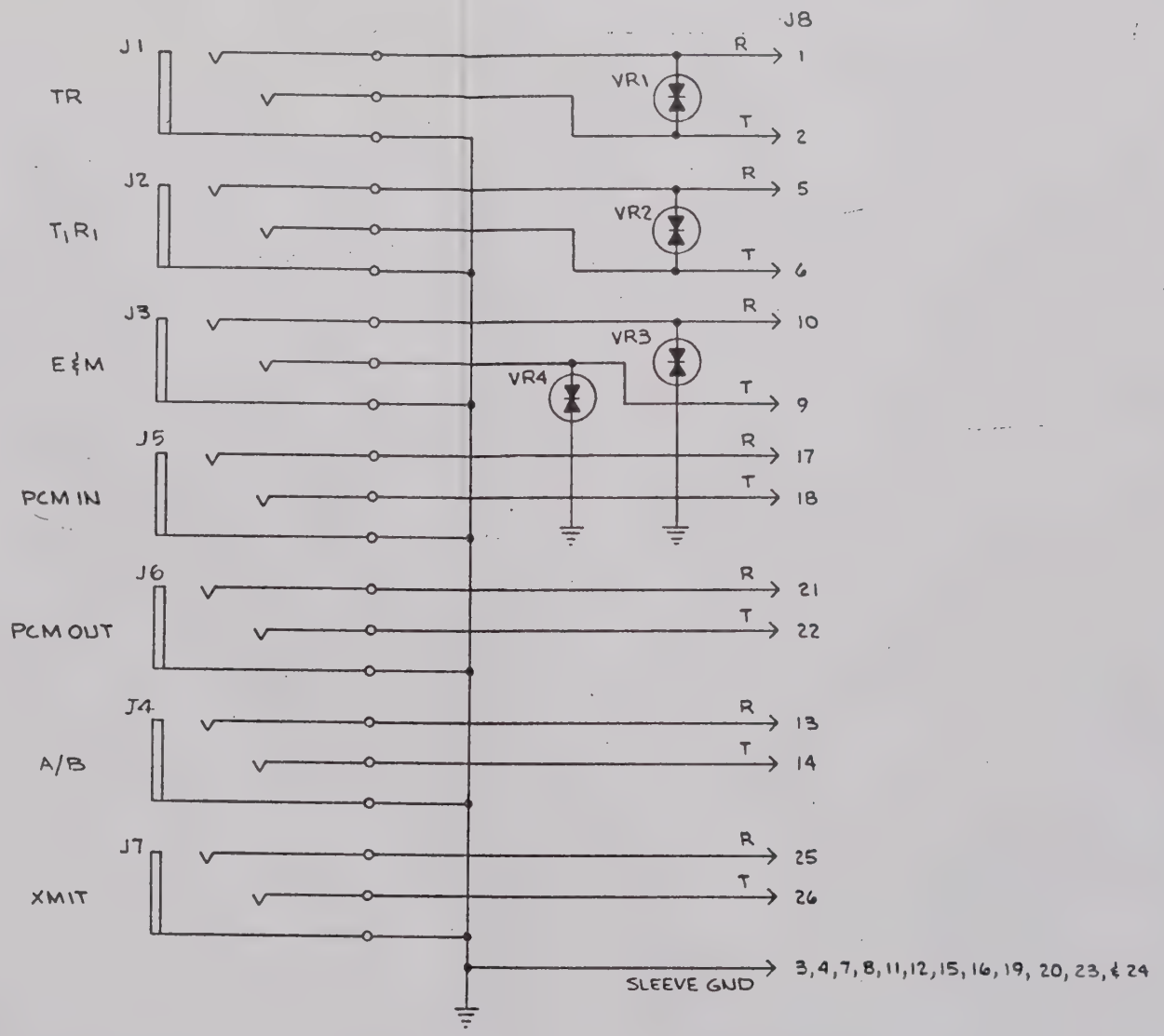
BERRY ELECTRONICS

DRAWING TITLE: PCB ASSEMBLY, JACK, DROP AND INSERT

DRAWING NO. 1900-0040-01 | REV A | SIZE C

SHEET 1 OF 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE	12-10-86	



FIND NO.	QTY REQ	CODE IDENT	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MFG NO.

LIST OF MATERIAL OR PARTS LIST

NEXT ASSY	QTY	USED ON	QTY
		966ALS	-

APPLICATION

MATERIAL —

FINISH —

TOLERANCES (UNLESS OTHERWISE NOTED)

	US	METRIC
XX ±	—	X ±
XXX ±	—	XX ±
ANGLES ·		

SCALE (DO NOT SCALE DRAWING)

SIGN-OFF BY	INITIAL	DATE
DRAFTSPERSON	EHZ	12/10/86
DRAFTING CHECKER		
ENGINEER APPROVAL		
PROJECT MANAGER		
DRAFTING MANAGER		
ENGINEERING MANAGER		

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BERRY ELECTRONICS

DRAWING TITLE: SCHEMATIC, JACK BOARD D/I

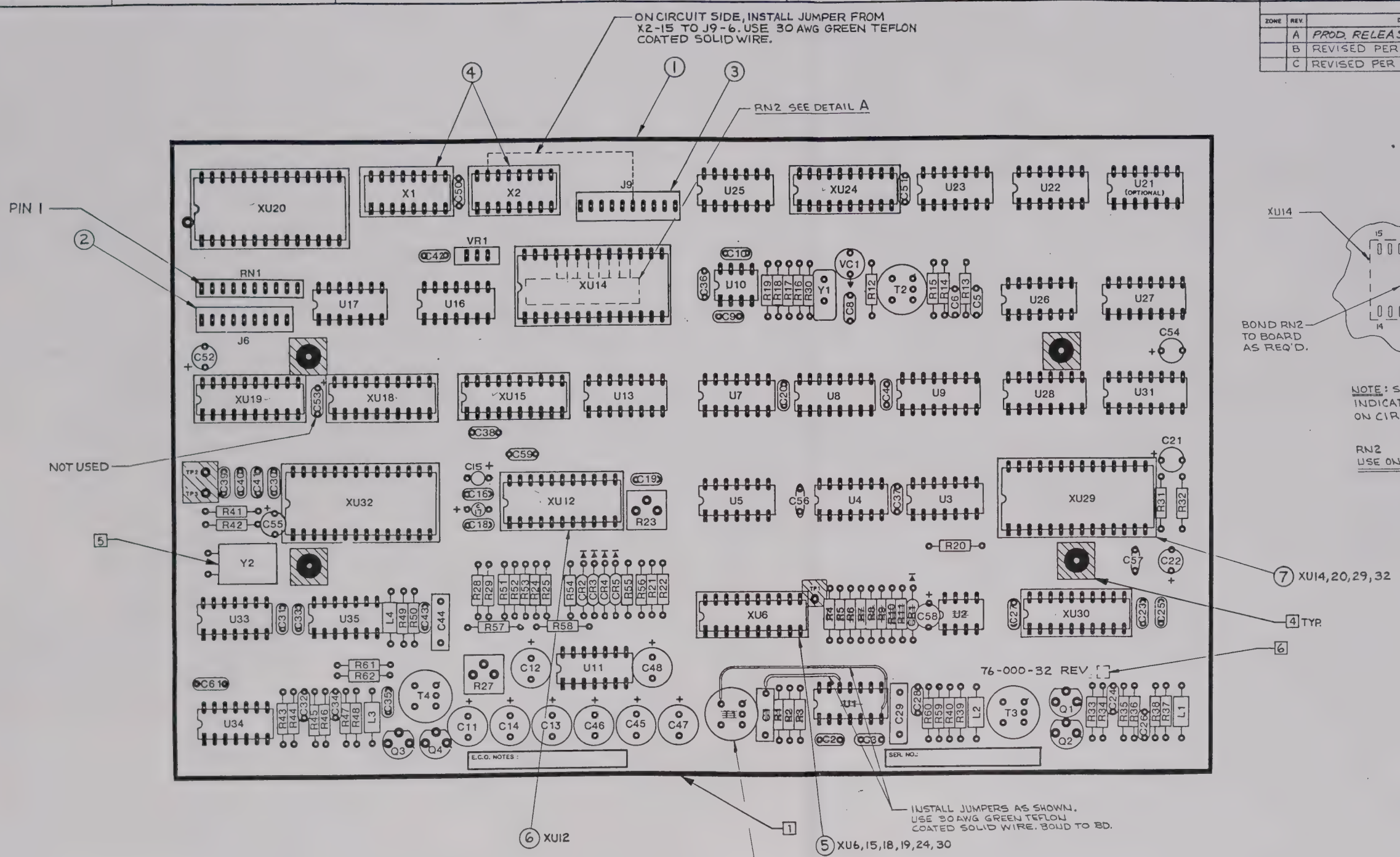
C | DRAWING NO. 1904-0040-01 | REV A

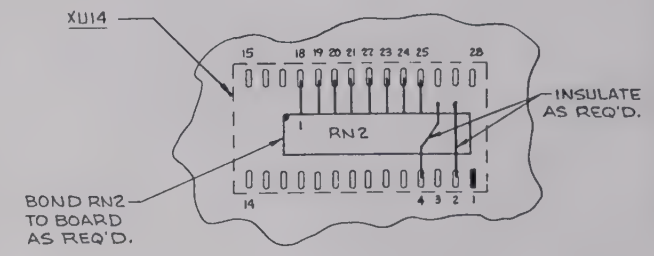
SHEET 1 OF 1

DWG. NO.	SH	REV.
76-000-32	1	C

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	PROD. RELEASE PER ECO 02-89-12	3-15-89	
	B	REVISED PER ECO 02-91-56	9-5-91	
	C	REVISED PER ECO 02-92-65	3-12-92	





SOLDER SIDE

NOTE: SOLDER LEADS OF RN2 TO INDICATED PINS OF IC SOCKET LEADS ON CIRCUIT SIDE.

RN2 DETAIL A
USE ONLY IF ROCKWELL PART IS USED

NOTES: UNLESS OTHERWISE SPECIFIED.
1. PC BOARD P/N: 72-50-090
2. REF. MATERIAL P/N:
   A. SCHEMATIC: SC 76-000-32
3. MAXIMUM COMPONENT HEIGHT: .600 .
4. SHIELD ALL SHADED AREAS FROM WAVE SOLDER.
5. SPOT BOND Y2 TO BOARD.
6. RUBBER STAMP LATEST REV APPROX WHERE SHOWN.
7. TRIM COMPONENT LEADS TO .060" FROM BOARD SURFACE TO END OF LEAD (EXCEPT I.C. LEADS.)

QTY REQD	FSCM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION
			PARTS LIST	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± ____ DECIMALS .XX ± ____ .XXX ± ____ ANGLES ± ____

MATERIAL: SEE B.O.M.

FINISH:

DO NOT SCALE DRAWING

CONTRACT NO.:

APPROVALS	DATE
DRAWN	8/12/87
CHECKED HGP	8/18/87
ISSUED	

CSE TECHNOLOGIES, INC.
NEW LONDON, MN

PCB ASSEMBLY, MAIN BOARD, 8407

SIZE	FSCM NO	DWG NO	REV
D		76-000-32	C

SCALE ____ SHEET 1 OF 1

NEXT ASSY	USED ON
3000-0103-01	314AL5, 966AL5
APPLICATION	

REF ACT 6100-1004-5021 REV D

DWG NO SC 76-000-32 | SH 1 | REV C

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	PROD. RELEASE PER ECO 02-89-12	3-15-89	
	B	REVISED PER ECO 02-91-56	9-5-91	
	C	DELETED CIRCUITRY D8,7,6 ECO 02-92-65	3-12-92	

ENCLOSED AREA COMPONENTS NOT USED.

NOTES: UNLESS OTHERWISE SPECIFIED.

1. ALL RESISTORS ARE M.F., 1%.
2. LAST REF. DESIG. USED: TP3, T4, J9, X2, RN1, VC1, U35, CR5, C61, R62.
3. UNUSED REF. DESIG.: R51, J7, J8, C7, C49.

REF. DESIG.	TYPE	GND	+5V	NO. OF PINS
U35	74LS08	7	14	14
U7,33	74LS04	7	14	14
U31	74HC123	1,8	3,16	16
U30	6000-1006	10,11	20	20
U32	R8050	9	19	28
U29	6002-1000	9	19	28
U27,28	74HC157	8	16	16
U25	74HC74	7	14	14
U24	6000-1015	10	20	20
U22,23	74HC00	7	14	14
U20	6001-1005	14,20,22	1,27,28	28
U19	6000-1014	10	20	20
U18	6000-1013	10	20	20
U17,34	74LS93	10	5	14
U16	74LS92	10	5	14
U15	6000-1005	10	20	20
U14	6002-1001	12,17	2,10	28
U13	74HC165	8	16	16
U12	53507	7	22	22
U11	XR3403			14
U10	LM360	5	8	8
U8,9	74LS221	8	16	16
U21	74HC04	7	14	14
U6	6000-1012	10	20	20
U5	74107	7	10,13,14	14
U3,4,26	74HC164	7	9,14	14
U2	LM311	1,4	5,6,8	8
U1	LM319	3,8	11	14

IC. DEVICE TABLE

PARTS LIST

QTY REQD	FSCM NO	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ____ DECIMALS .XX ± ____ .XXX ± ____ ANGLES ____

MATERIAL ____
FINISH ____
DO NOT SCALE DRAWING

CONTRACT NO. ____

APPROVALS	DATE
DRAWN KAC	11/1/88
CHECKED	
ISSUED	

NEXT ASSY | USED ON
APPLICATION

CSE TECHNOLOGIES, INC.
NEW LONDON, MN.

SCHEMATIC, MAIN BOARD, 8407

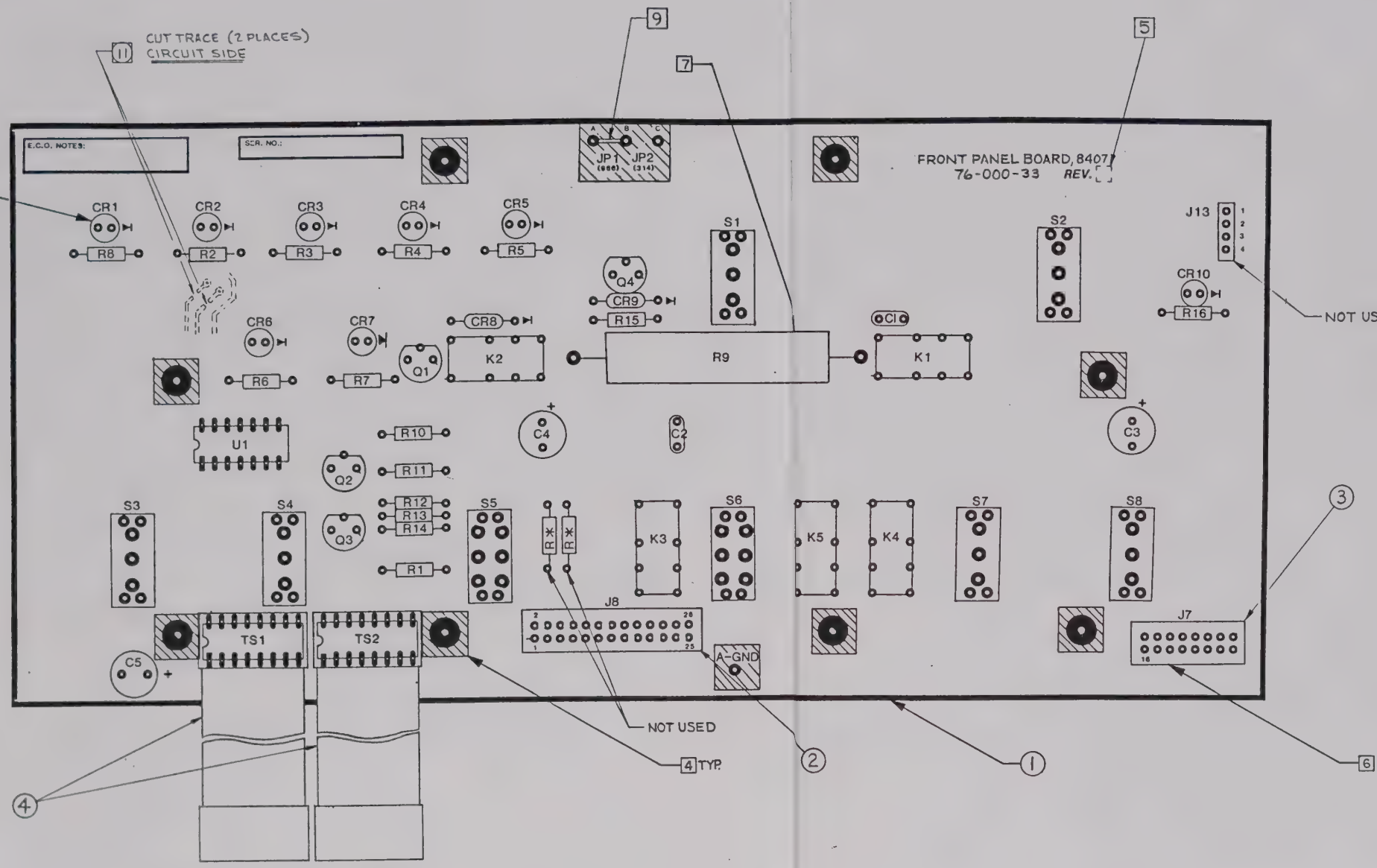
SIZE D | FSCM NO. ____ | DWG. NO. SC 76-000-32 | REV C
SCALE NONE | SHEET 1 OF 1

REFACT 6100-1004-1021 REV C

DWG. NO.	SH	REV.
76-000-33	1	B

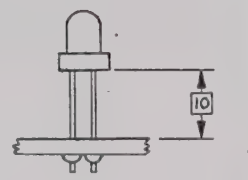
REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	PROD. RELEASE PER ECO 02-89-12	3-15-89	
	B	CUT TRACES, NOTE 11 ECO 02-92-65	3-12-92	

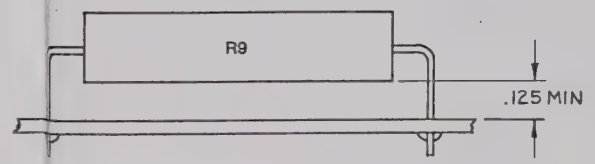


NOTES: UNLESS OTHERWISE SPECIFIED.

1. PC BOARD P/N: 72-50-091
2. REF. MATERIAL P/N:
   A. SCHEMATICS: SC 76-000-33
3. MAXIMUM COMPONENT HEIGHT: .900.
4. SHIELD ALL SHADED AREAS FROM WAVE SOLDER ▨.
5. RUBBER STAMP LATEST REV APPROX WHERE SHOWN.
6. LOAD J7 SO THAT PIN 1 WILL MATCH WITH PIN 16 ON THE BOARD.
7. KEEP R9'S LEADS BENT AND .600 FROM BOARD AS SHOWN IN DETAIL B.
8. TRIM COMPONENT LEADS TO .060" FROM BOARD SURFACE TO END OF LEAD (EXCEPT I.C. LEADS).
9. SOLDER BUSS WIRE TO PADS A & B AS SHOWN.
10. AFTER FLOW SOLDERING USE FRONT PANEL (72-71-121) AS A FIXTURE TO INSTALL LED'S CR1-CR7. LED'S SHOULD BE PRESSED INTO LED BUSHING TO SET HEIGHT.
11. PRIOR TO ASSY, CUT TRACES AT VIA AS SHOWN (CIRCUIT SIDE) 2 PLACES



DETAIL A
SCALE: NONE
7 PLCS (CR1-CR7)



DETAIL B
SCALE: NONE

PARTS LIST

QTY REQD	FSCM NO	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION

3000-0103-01	314AL5,966AL5
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN KAC	11/1/88
CHECKED	
ISSUED	

CSE TECHNOLOGIES, INC.
NEW LONDON, MN

PCB ASSEMBLY,
FRONT PANEL BOARD, 8407

SIZE	FSCM NO.	DWG. NO.	REV
D		76-000-33	B

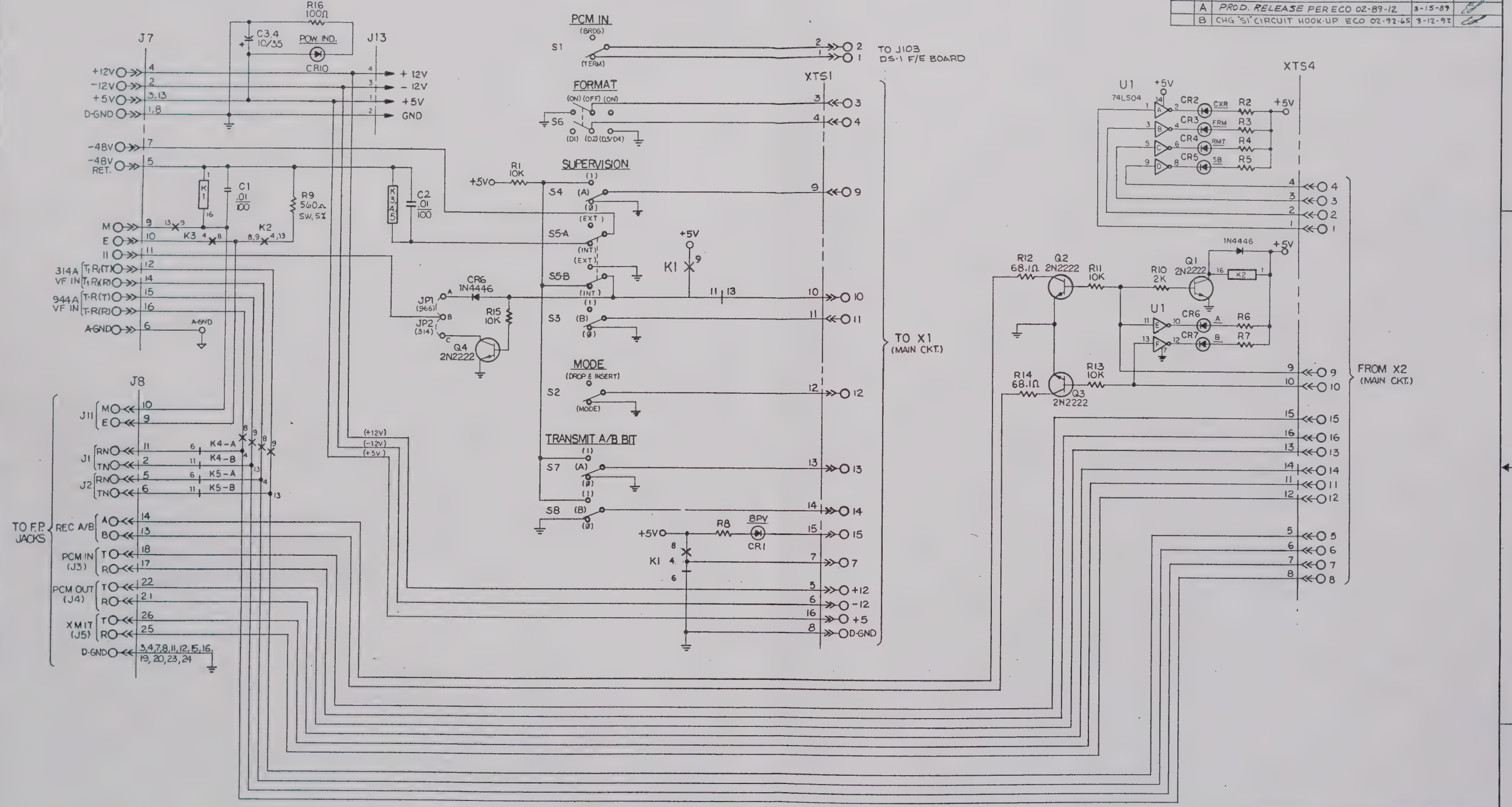
SCALE | SHEET 1 OF 1

REF ACT 6100-1004-5022 REV D

DWG NO	SH	REV
SC 76-000-33	1	B

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	PROD. RELEASE PER ECO 02-89-12	3-15-89	
	B	CHG 'S1' CIRCUIT HOOK-UP ECO 02-92-65	3-12-92	



NOTES: UNLESS OTHERWISE SPECIFIED.
1. RESISTORS (R2-R8) ARE 100Ω, 1%.
2. ALL RELAYS ARE 2 FORM C.
3. LAST REF. DESIG. USED: U1, K5, S8, TS2, J12, C5, CR10, R15.
4. UNUSED REF. DESIG.: J1-J6.

QTY REQD	FSCM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION

PARTS LIST

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± ____ DECIMALS .XX ± ____ .XXX ± ____ ANGLES ± ____
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN PH. NG.	6/10/88
CHECKED MPC	6/10/88
ISSUED	

CSE TECHNOLOGIES, INC.
NEW LONDON, MN.

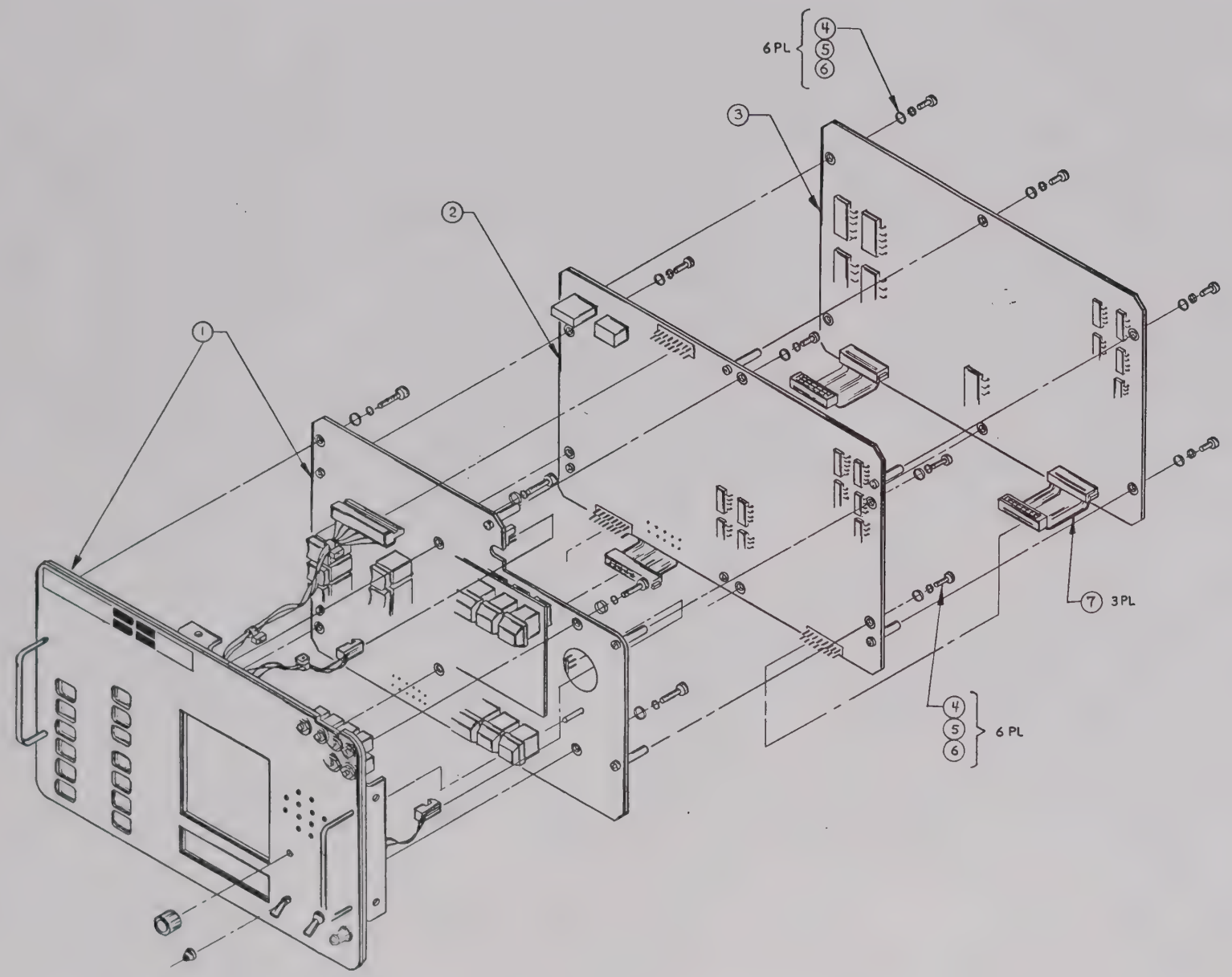
SCHEMATIC, FRONT PANEL BOARD, 8407

SIZE	FSCM NO.	DWG. NO.	REV.
D		SC 76-000-33	B

SCALE — SHEET 1 OF 1

REF ACT 8.8407-00-001 REV B

THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING FIELD USE — INCH / MM LOCAL AND GENERAL NOTE USE — INCH / MM				A PROD REL.	8/14/96		8/16/96				



NOTES: UNLESS OTHERWISE SPECIFIED.

1. FOR WIRING DIAGRAM SEE DWG 3004-0104-01

USED ON MODEL 314AL5

MATERIAL	TOLERANCES	SIGN OFF BY	INITIAL	DATE	
FINISH	U.S. / METRIC	DRAFTSPERSON	R.S	8/14/96	BERRY ELECTRONICS
	XX ± — / XX ± —	DRAFTING CHECKER	EH7	8/16/96	TITLE: ASSY, TOP MODULE
	XXX ± — / XXX ± —	ENGINEER APPROVAL		8/16/96	PART DESCRIPTION: 314AL5
	ANGLES ± — / —	PROJECT MANAGER			
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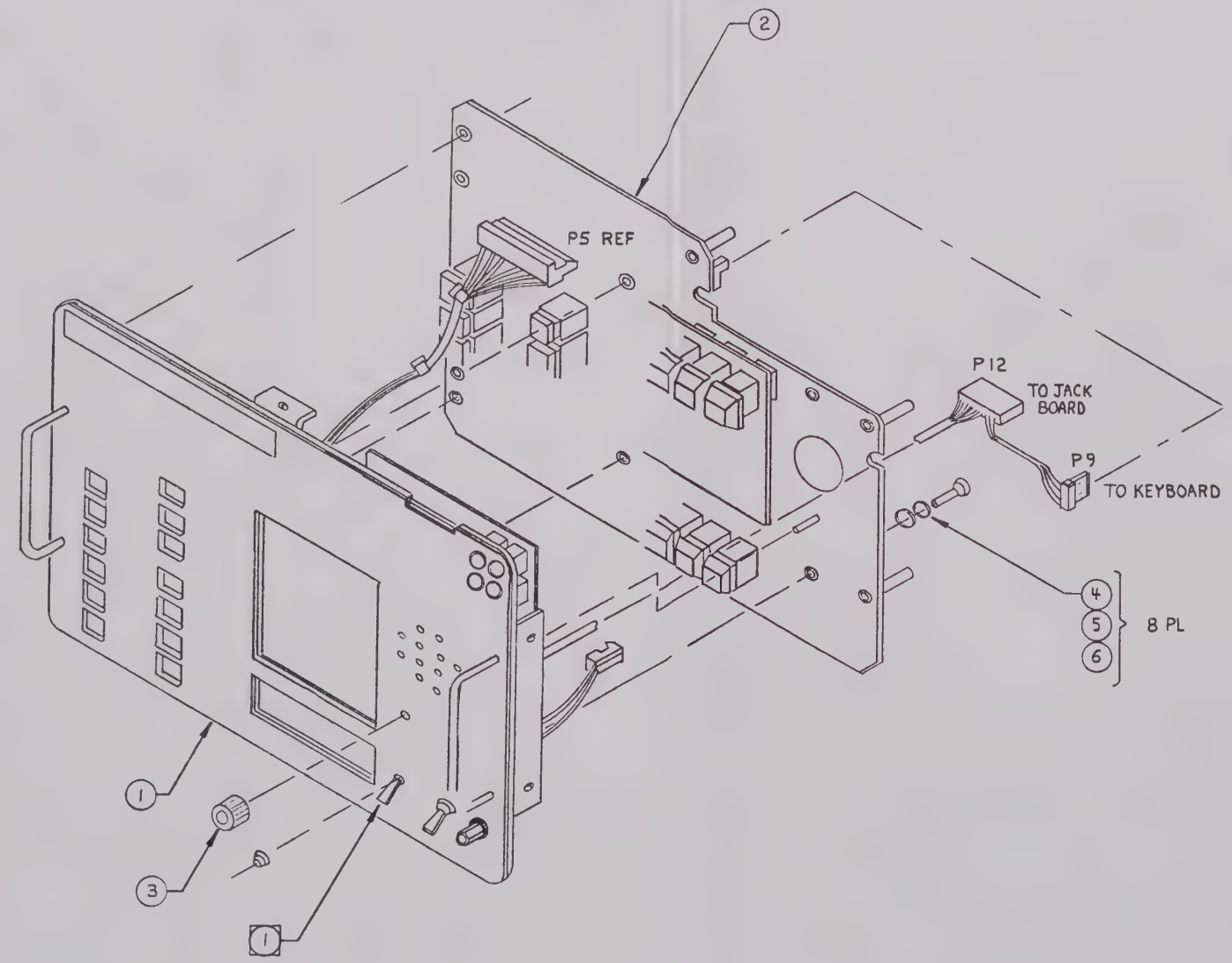
		ENGINEERING MANAGER		8/16/96	

INCH 0 1 2 3 4 5 6 — MM 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE		
	B	REMOVED KEYTOPS & SHT 2	3-17-92	



2. TAG ASSY WITH BERRY P/N AND REV.

[1] PRIOR TO INSTALLATION OF KEYBOARD (ITEM 2) CHECK ROTATION OF SWITCH (S35) INSTALL HARDWARE TO MOUNT BOARD THEN SOLDER SWITCH LEADS TO BOARD.

NOTES: UNLESS OTHERWISE SPECIFIED.

FIND NO.	QTY REQ	CODE IDENT	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MFG NO.
				LIST OF MATERIAL OR PARTS LIST	

3000-0105-01	1	314AL5	1
NEXT ASSY	QTY	USED ON	QTY
APPLICATION			

MATERIAL: SEE B/M

FINISH: ———

TOLERANCES (UNLESS OTHERWISE NOTED)

U.S.		METRIC	
XX ±		X ±	
XXX ±		XX ±	
ANGLES °			

SCALE 1:2 (DO NOT SCALE DRAWING)

SIGN-OFF BY	INITIAL	DATE
DRAFTSPERSON	RS	7-86
DRAFTING CHECKER	EHL	8/19/86
ENGINEER APPROVAL	[illegible]	9/10/86
PROJECT MANAGER		
DRAFTING MANAGER	[illegible]	8/19/86
ENGINEERING MANAGER	[illegible]	9/10/86

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BERRY ELECTRONICS

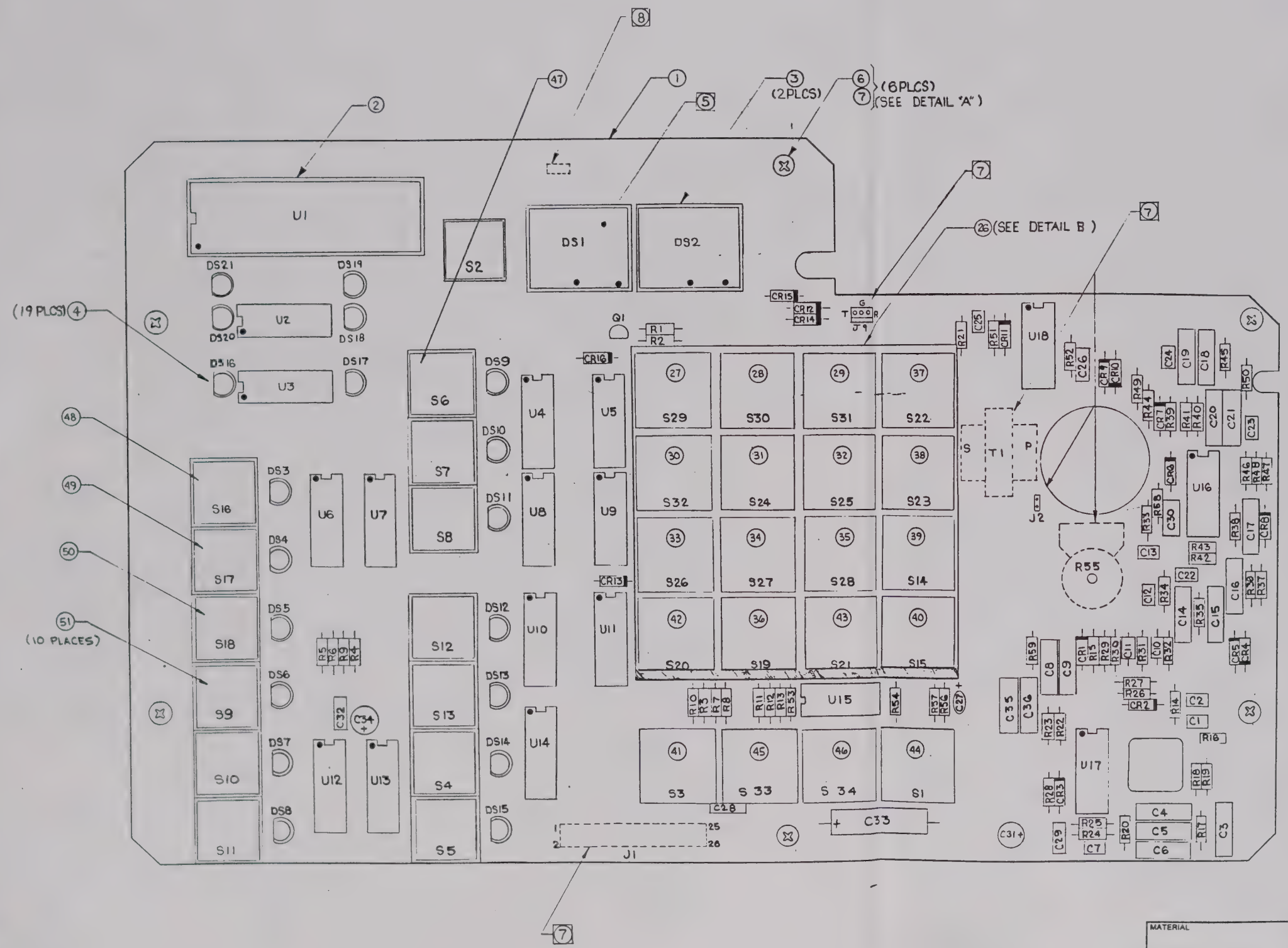
DRAWING TITLE: ASSY, 314AL5 FRONT PANEL MODULE

C | DRAWING NO. 3000-0107-01 | REV B

SHEET 1 OF 1

DWG NO 1902-0007-01 | SH | REV H

E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	CODE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
REDRAWN		FOR CLARITY SEE HISTORY FOR ECO'S					
G	10/28/82	ECO 174					
H	3/7/83	ADDED REVISION					



(19 PLCS) (4)

(48)

(49)

(50)

(51)
(10 PLACES)

(8)

(47)

(1)

(5)

(3)
(2PLCS)

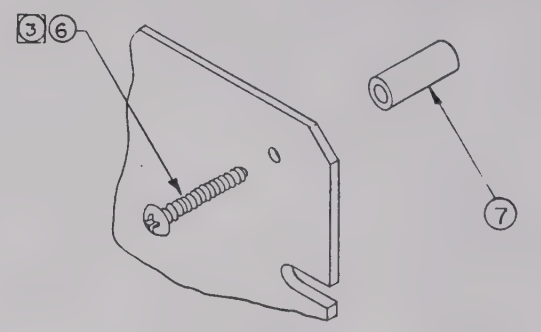
(6)
(7)
(6PLCS)
(SEE DETAIL "A")

(7)

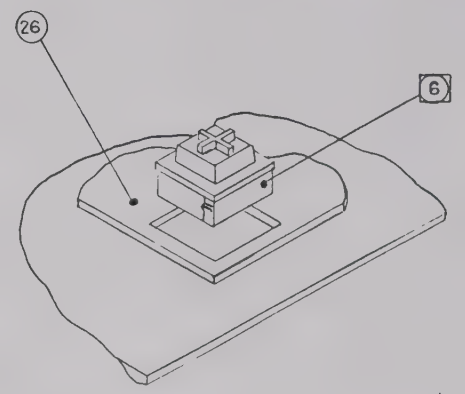
(26) (SEE DETAIL B)

(7)

(7)



DETAIL "A"



DETAIL "B"

NOTE : UNLESS OTHERWISE SPECIFIED

1. BERRY P/N 0204-0103-03 (C3,4,5,6,14,15,16,17) IS PAINTED BLACK ON TOP FOR REF.
2. BERRY P/N 0204-0103-04 (C8,9,18,19,20,21,35,36) IS PAINTED WHITE ON TOP FOR REF.
3. USE LOCTITE 242 ON THREADS AS REQD.
4. TRIM COMPONENT LEADS TO .060 INCH FROM BOARD SURFACE TO END OF LEAD, EXCEPT IC LEADS
5. THE FOLLOWING COMPONENTS TO BE SOLDERED BY HAND AFTER ALL OTHER COMPONENTS HAVE BEEN THRU WAVE SOLDERING S1 THRU S13 S16 THRU S18, S33, S34, D91, DS2, AND U1.
6. INSTALL, S14, S15, S19 THRU S32 TO SUB PANEL (ITEM 26) PRIOR TO HAND SOLDERING TO BOARD
7. INSTALL J1, J2, J9, T1, AND R55 ON FARSIDE
8. RUBBER STAMP LATEST REV., APPROX WHERE SHOWN

MATERIAL	TOLERANCES UNLESS OTHERWISE NOTED		SIGN-OFF BY	INITIAL	DATE
	US	METRIC	DRAFTSPERSON	P Conner	4/10/84
FINISH	XX ±	±	DRAFTING CHECKER		4/11/84
	XXX ±	±	ENGINEER APPROVAL		
	ANGLES ±		PROJECT MANAGER		
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	SHT 1 OF 1		ENGINEERING MANAGER		

cable spinning

TITLE: ASSEMBLY DRAWING

PART DESCRIPTION: 314A KEYBOARD/DISPLAY

D | P/N 1902-0007-01

THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING				REV A	2 FEB 84						
FIELD USE INCH MM				REV A-2	9/84						
LOCAL AND GENERAL NOTE USE INCH / MM				B	1/3/85	E34584-1	1/7/85				
				C	1/9/85	E1085-1	1/9/85				

DIGIT Ø ADDRESS ON16 · DIGIT 1 ADDRESS IN16 · DIGIT 2 ADDRESS 2N16 · DIGIT 3 ADDRESS 3N16

DS1 · DS2 · G F E D C B A

R1 680Ω · Q1 2N2222 · R2 22K

U1 ICM 7212

R3–R9 100K · R10 100K

PAUSE S1 · AUT SEND S4 · E/M TERM S9 · C STP S14 · Ø S19 · 5 S24

DVM ON S2 · RPT SEND S5 · SF ORIG S10 · D S15 · *KP S20 · 6 S25 · 1 S29

CLR S3 · MF S6 · SF TERM S11 · LPN S16 · #ST S21 · 7 S26 · 2 S30

GS TIP S33 · TT S7 · MON S12 · LPR S17 · A STP S22 · 8 S27 · 3 S31

GS RING S34 · DP S8 · MAN SEND S13 · E/M ORIG S18 · B STP S23 · 9 S28 · 4 S32

J9-T · J9-R · J9-G

U14 4503 · U9 4042 · U5 4042 · U6 4042 · U7 4042 · U8 4042 · U13 4042

CR12 IN914 · CR13 IN914 · CR14 IN914 · CR15 · CR16 IN914

S35 ON HOOK / OFF HOOK

U11 4503

J1-17 · A · J1-19 · J1-4 · J1-3 · J1-1 · J1-15 · J1-14 · J1-7 · J1-9 · J1-5 · J1-11 · J1-12 · J1-6

U12 4051 · U4 4051 · U10 4051 · U3 4053 · U2 4053

DS3 LPN · DS4 LPR · DS5 EMO · DS6 SMT · DS7 SEQ · DS8 SFT

DS9 MF · DS10 TT · DS11 DP

DS12 MON · DS13 MAN SEND · DS14 AUTO SEND · DS15 REPEAT SEND

DS16 GP1 · DS17 GP2

DS18 TERM ON · DS19 TERM OFF · DS20 ORIG ON · DS21 ORIG OFF

ORIG ON HOOK · TERM ON HOOK

U15 324 · R11 100Ω · R12 10K · R13 82K

MATERIAL	TOLERANCES (UNLESS OTHERWISE NOTED)	U.S.	METRIC	SIGN-OFF BY	INITIAL	DATE
—				DRAFTSPERSON	JSCOTT	6-2-84
FINISH	XX ±	—	XX ±	—	DRAFTING CHECKER	
—	XXX ±	—	XXX ±	—	ENGINEER APPROVAL	
—	ANGLES ±	—		—	PROJECT MANAGER	

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SCALE (DO NOT SCALE DRAWING) · DRAWING LEVEL C · SHT 1 OF 2

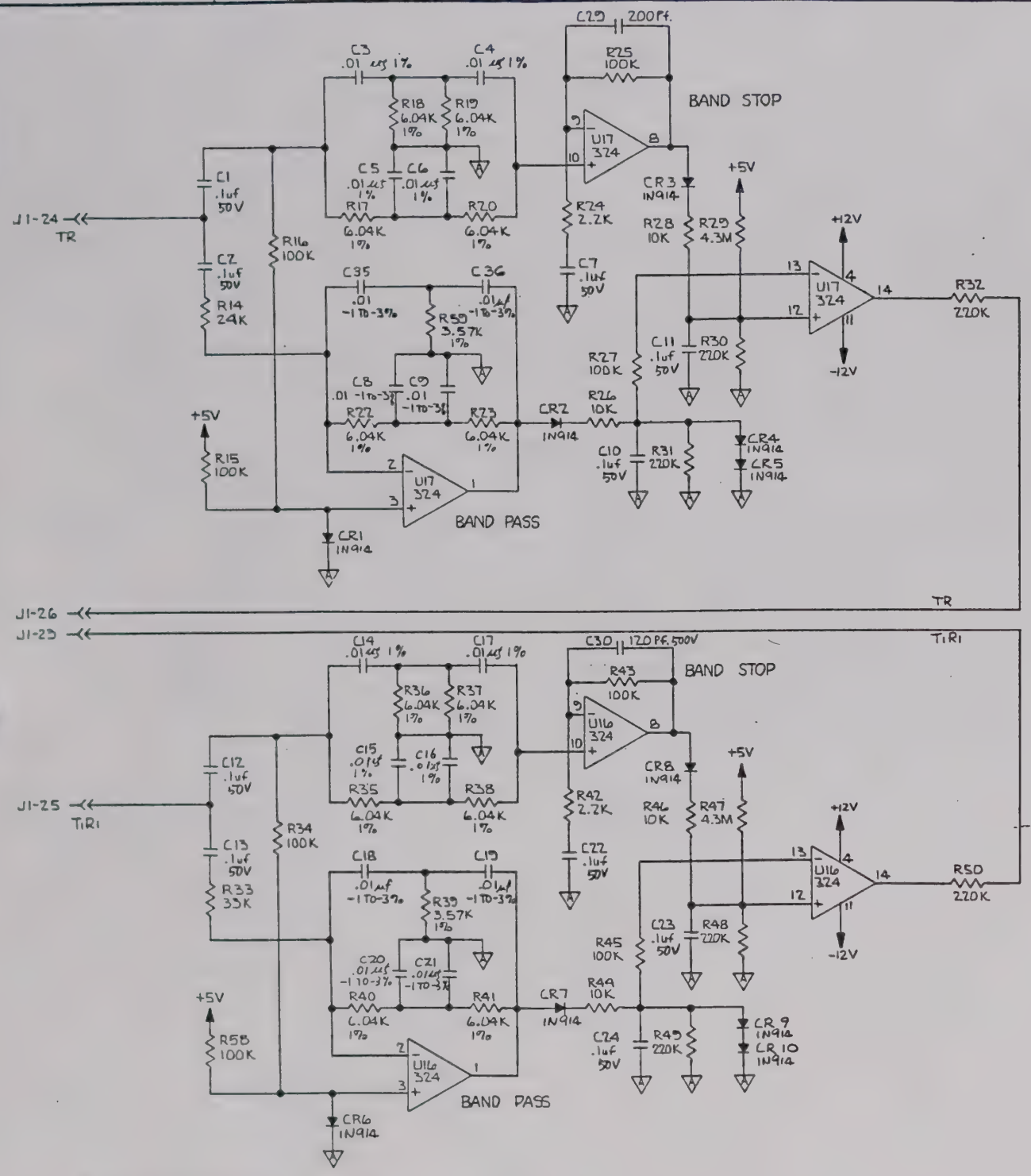
DRAFTING MANAGER JScott 7/6/84 · ENGINEERING MANAGER

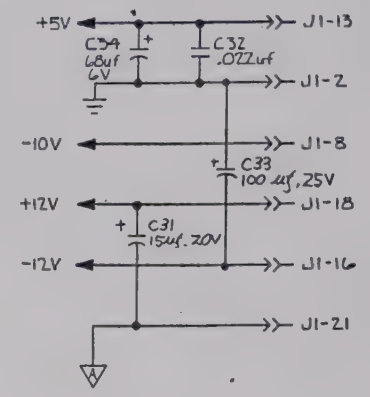
BERRY ELECTRONICS

TITLE: PART BASIC SCHEMATIC DWG · PART DESCRIPTION 314A KEYBOARD

D · P/N 1904-0007-01

THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING				B	1/7/84	E3458A-1	1/7/84				
FIELD USE INCH MM				C	1/9/85	E1085-1	1/9/85				
LOCAL AND GENERAL NOTE USE INCH / MM											





NOTE : UNLESS OTHERWISE SPECIFIED
1. ALL RESISTANCES ARE IN OHM 1/4W. 5%
2 ALL CAPACITANCES ARE IN uf

MATERIAL	TOLERANCES (UNLESS OTHERWISE NOTED)				SIGN-OFF BY	INITIAL	DATE	BERRY ELECTRONICS
	U.S.		METRIC		DRAFTSPERSON	JSCOTT	5/81	
FINISH	XX ±	—	XX ±	—	DRAFTING CHECKER			TITLE: SCHEMATIC DWG.
	XXX ±	—	XXX ±	—	ENGINEER APPROVAL			PART DESCRIPTION: 314A KEYBOARD
	ANGLES °	—		—	PROJECT MANAGER			
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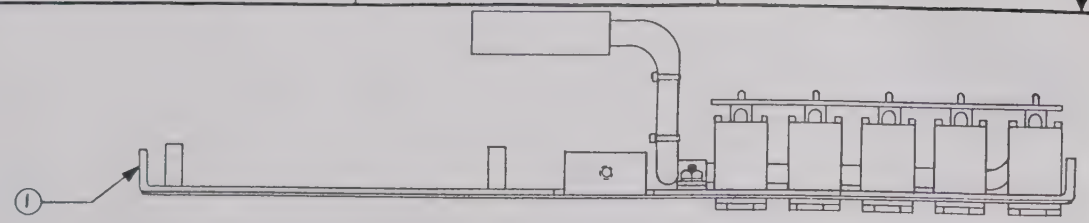
	SHT 2 OF 2		C		ENGINEERING MANAGER			

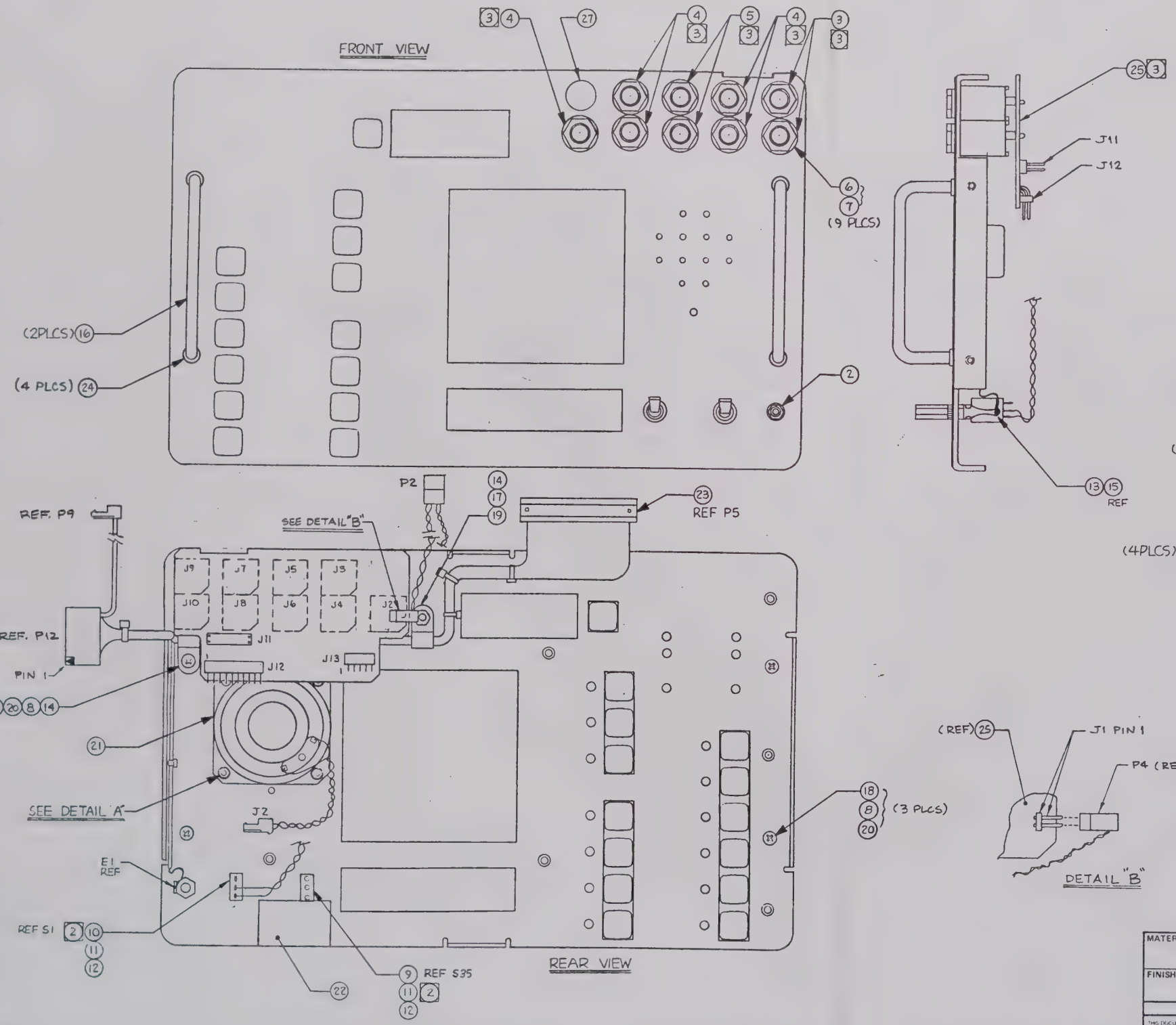
0 1 2 3 4 5 6 INCH
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 MM

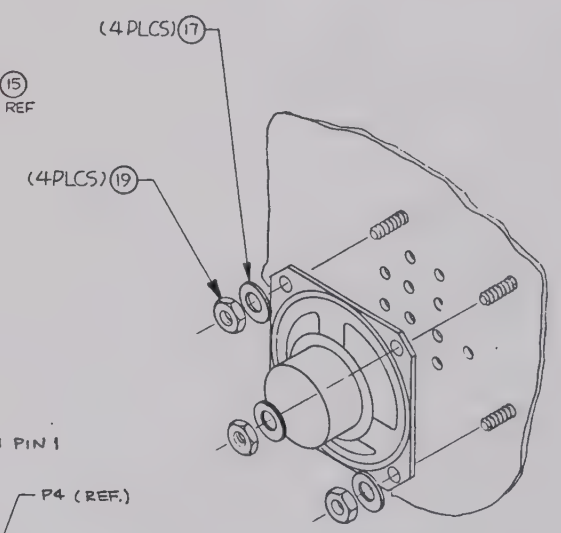
THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING				A PROD REL.	7/21/86		7/21/86				
FIELD USE INCH / MM				B PER ECO 2027	10/28/86		11/7/86				
LOCAL AND GENERAL NOTE USE INCH / MM				C PER ECO 218	1/2/87		1/6/87				

NOTE: UNLESS OTHERWISE SPECIFIED

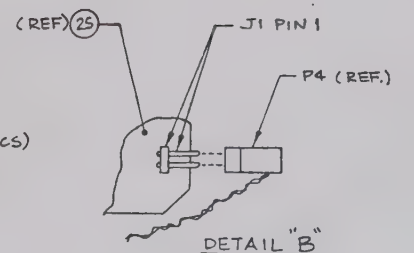
1. FOR WIRING DIAGRAM SEE DWG NO 3004-0104-01
2. INSTALL HEX NUT (ITEM 12) TO SWITCHES (ITEM 9 & 10) ASSEMBLE SWITCHES TO FRONT PANEL (ITEM 1) INSTALL DRESS NUT (ITEM 11) AND TIGHTEN TO FULL THREAD DEPTH. NEXT TIGHTEN HEX NUT TO BACK SIDE OF PANEL ROTATE SWITCHES AS SHOWN, USING CAUTION NOT TO SCRATCH FRONT PANEL. NO'S ON SWITCH ARE FOR REF. ONLY.
3. USING REAR VIEW AS REFERENCE, POSITION JACKS (ITEM 3,4,5) INTO JACK BOARD (ITEM 25) DO NOT SOLDER AT THIS TIME INSTALL JACKS AND JACK BOARD TO REAR OF FRONT PANEL (ITEM 1). INSTALL WASHER (ITEM 6) AND NUT (ITEM 7) AND TIGHTEN TO SPECIFIED TORQUE 6.0 IN LBS MAX. AFTER ALL JACKS ARE SECURED TO FRONT PANEL, SOLDER JACKS TO BOARD ASSY, BEING SURE BOARD ASSY IS SEATED ON JACK PINS.







DETAIL "A"



DETAIL "B"

MATERIAL	TOLERANCES UNLESS OTHERWISE NOTED				USED ON 314ALS			
—	U.S.		METRIC		SIGN OFF BY	INITIAL	DATE	BERRY ELECTRONICS
FINISH	XX ±	—	X ±	—	DRAFTSPERSON	SCOTT	8-81	
—	XXX ±	—	XX ±	—	DRAFTING CHECKER	J. Scott	4/82	TITLE PART BASIC: ASSEMBLY, PART DESCRIPTION: FRONT PANEL 314ALS
	ANGLES ±	—		—	ENGINEER APPROVAL		9/10/86	
					PROJECT MANAGER		9/10/86	
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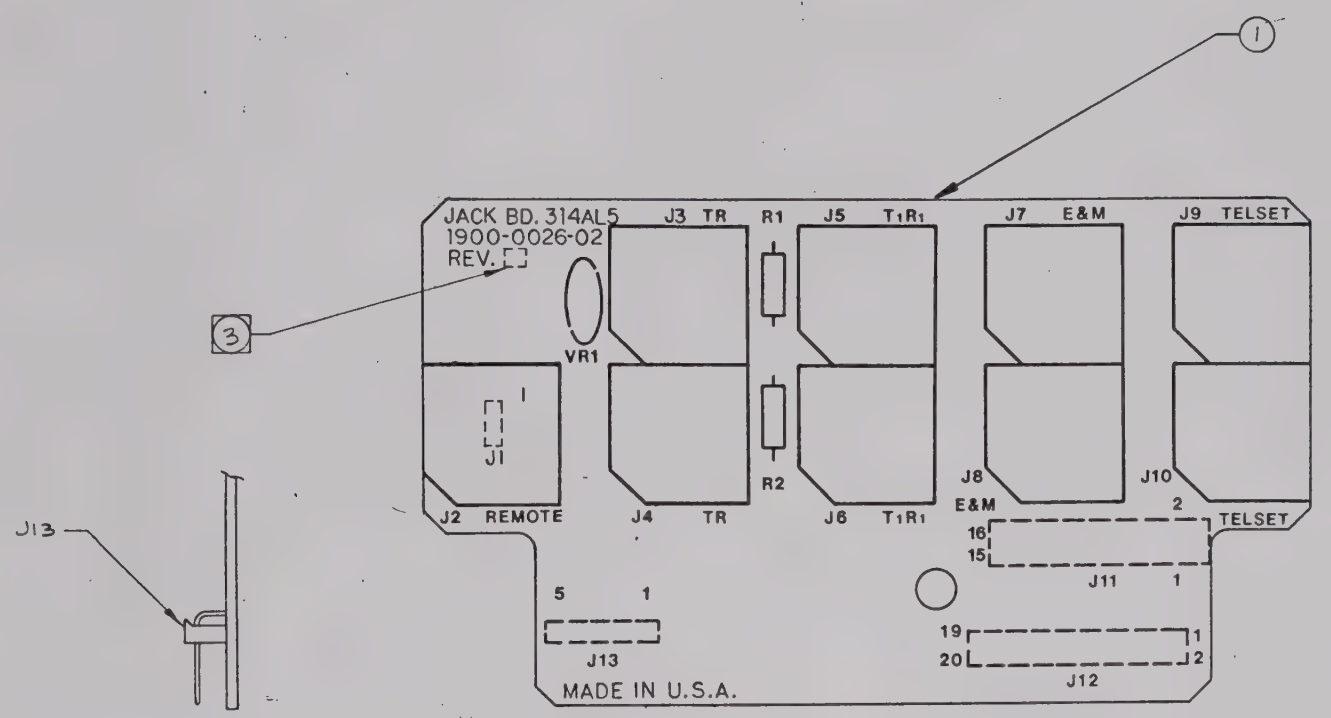
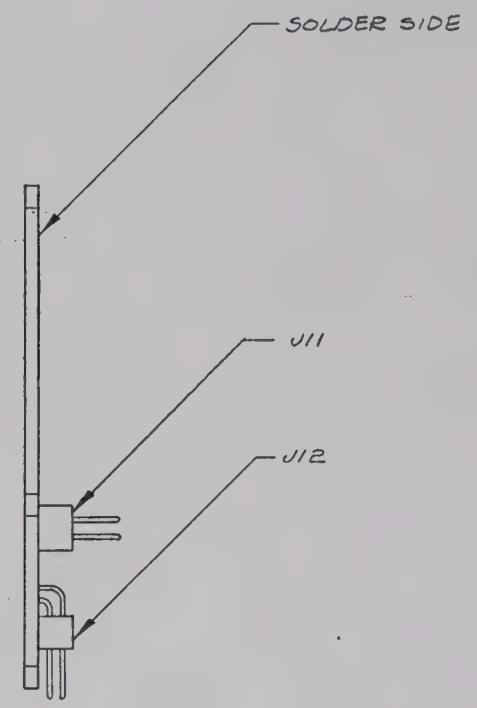
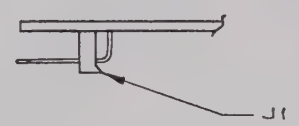
	SHT 1 OF 1				ENGINEERING MANAGER	JOHN [illegible]	7/9/86	

INCH 0 1 2 3 4 5 6 — MM 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE	8-20-86	
	B	CHANGED PER ECO-200	9/30/86	







4. FOR WIRING DIAGRAM SEE 3004-0019-02.

(3) RUBBER STAMP LATEST REV. APPROX. WHERE SHOWN.

2. TRIM CONNECTOR LEADS TO .060" OF BOARD SURFACE.

1. J2 THRU J10 ARE NOT TO BE INSTALLED AT THIS LEVEL. (NEXT ASS'Y).

NOTES: UNLESS OTHERWISE SPECIFIED

FIND NO.	QTY REQ	CODE IDENT	PART NO. OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MFG NO.
				LIST OF MATERIAL OR PARTS LIST	

3000-0097-01	1	314AL5	1	
NEXT ASSY	QTY	USED ON	QTY	
APPLICATION				

MATERIAL —

FINISH —

TOLERANCES (UNLESS OTHERWISE NOTED)

	U.S.		METRIC
XX ±	—	X :	—
XXX ±	—	XX :	—
ANGLES	—		—

SCALE 2 : 1
DO NOT SCALE DRAWING

SIGN-OFF BY	INITIAL	DATE
DRAFTSPERSON	FILOMENA	9/10/86
DRAFTING CHECKER	EHZ.	9/10/86
ENGINEER APPROVAL		9/10/86
PROJECT MANAGER		
DRAFTING MANAGER		9/10/86
ENGINEERING MANAGER		9/10/86

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BERRY ELECTRONICS

DRAWING TITLE
PCB ASSEMBLY,
JACK BD., 314AL5

C | DRAWING NO. 1900-0026-02 | REV B

SHEET 1 OF 1

THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING				A PROD. REL	8/21/86		8/21/86				
FIELD USE INCH MM				B ECO 200	8/28/86		9/10/86				
LOCAL AND GENERAL NOTE USE INCH / MM											

HARNESS ASSY
REF: 2100-0026-02

P5 — P12 J12

6	BLU	15
5	GRN	13
7	VIO	9
8	GRY	11
16	BRN/WHT/BLU	17
15	BRN/WHT/GRN	19
9	WHT	14
10	BRN/WHT/BLK	10
12	BRN/WHT/RED	20
11	BRN/WHT/BRN	16
2	N/C	
17	BRN/WHT/VIO	8
18	BRN/WHT/GRY	7
14	BRN/WHT/YEL	12
13	BRN/WHT/ORN	18
4	YEL	
1	BRN	
3	ORG	

J13: 2, 4, 1, 5, 3 — N/C

J11: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 — N/C., 14, 15, 16

P9 GND START

1	BRN/WHT/VIO	6
2	YEL	4
3	BRN/WHT/GRY	3
		5
		1
	YEL	2

SOLDER LUG E1

J1: 2, 1

TELSET (J9): T, TSW, S

E&M (J7): R, T, S

T, R, (J5): TSW, T, RO, S, RSW, RI IM

TR (J3): R, T, S

(J10): T, TSW, S

(J8): R, T, S

R2 IM

(J6): RSW, S, R, T, TSW

(J4): R, T, S

REMOTE (J2): R, T, S

VRI 68V

REF: 1900-0026-02 ASSY, JACK BOARD

MATERIAL —	TOLERANCES (UNLESS OTHERWISE NOTED)		SIGN-OFF BY	INITIAL	DATE
FINISH —	U.S.	METRIC	DRAFTSPERSON	RS	8/21/86
	.XX ± —	X ± —	DRAFTING CHECKER	EHZ.	8/21/86
	.XXX ± —	XX ± —	ENGINEER APPROVAL		9/10/86
	ANGLES ± —	—	PROJECT MANAGER		
	SCALE — (DO NOT SCALE DRAWING)	DRAWING LEVEL B	DRAFTING MANAGER		
	SHT 1 OF 1		ENGINEERING MANAGER		

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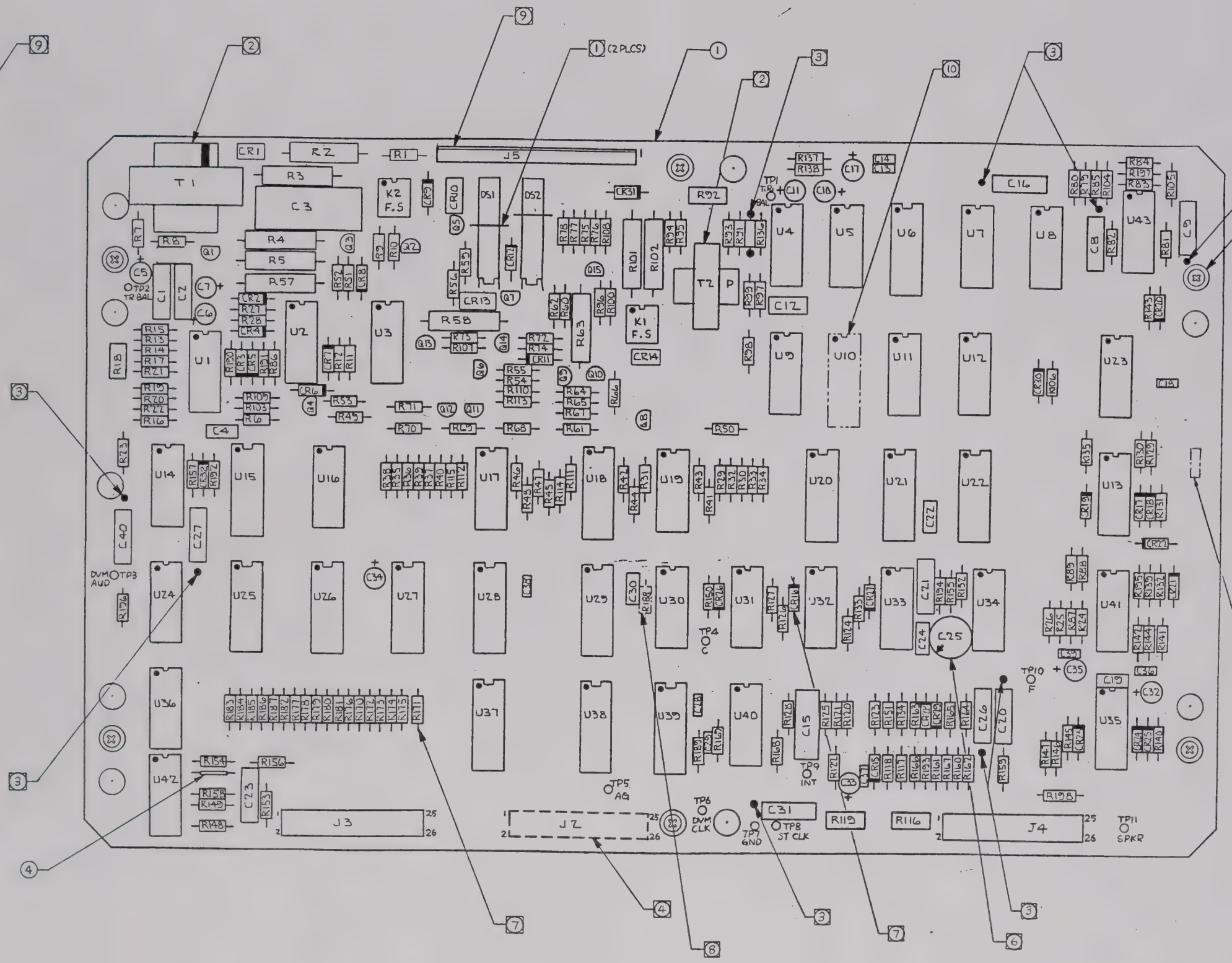
BERRY ELECTRONICS

TITLE — PART BASIC: WIRING DIAGRAM — PART DESCRIPTION: FRONT PANEL 314ALS

C — P/N 3004-0019-02

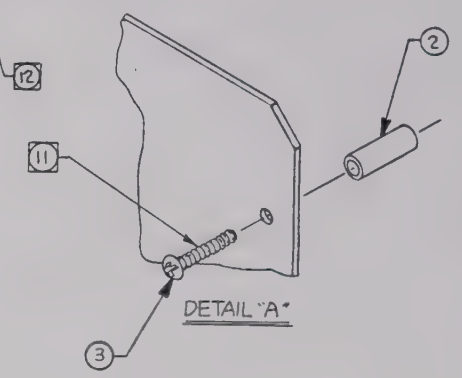
INCH 0 1 2 3 4 5 6
MM 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

REV			
REV B	11/3/82	REV A	2 FEB '84
E3258A-1	1/2/85		
REV C	1/10/85	1085-1	
REV D	1/14/85	E1485-1	
REV E	4/11/85	125	
REV F	4/21/86	177	
REV G	3/14/92		



NOTE: UNLESS OTHERWISE SPECIFIED

1. DS-1 & DS-2 TO BE HAND SOLDERED, AFTER WAVE SOLDERING.
2. T1 & T2 TO BE HAND SOLDERED, AFTER WAVE SOLDERING
3. FEED THRU NO COMPONENTS REFERENCE ONLY
4. J2 TO BE HAND SOLDERED, AFTER WAVE SOLDERING ON FARSIDE OF BOARD.
5. TRIM COMPONENT LEADS TO .060 INCH ABOVE CIRCUIT SIDE BOARD SURFACE, ACCEPT I.C. LEADS.
6. ARROW ON C25 MUST BE TOWARDS INDICATED POSITION
7. INSTALL R170 THRU R187 & CR16 WITH WRITTEN VALUES FACING UP
8. R188 TEST SELECTED RESISTOR SOLDER MASK HOLES
9. J5 POLARIZED CONNECTOR. RAISED EDGE ASSEMBLED TOWARDS EDGE OF BOARD
10. INDICATED COMPONENT NOT USED SHOWN FOR REFERENCE ONLY
11. USE LOCTITE NO. 242 ON THREADS AS REQ'D.
12. RUBBER STAMP LATEST REV. APPROX WHERE SHOWN.



BERRY ELECTRONICS, INC.

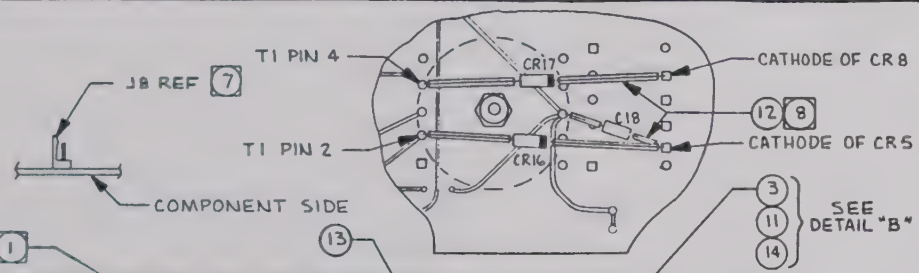
G

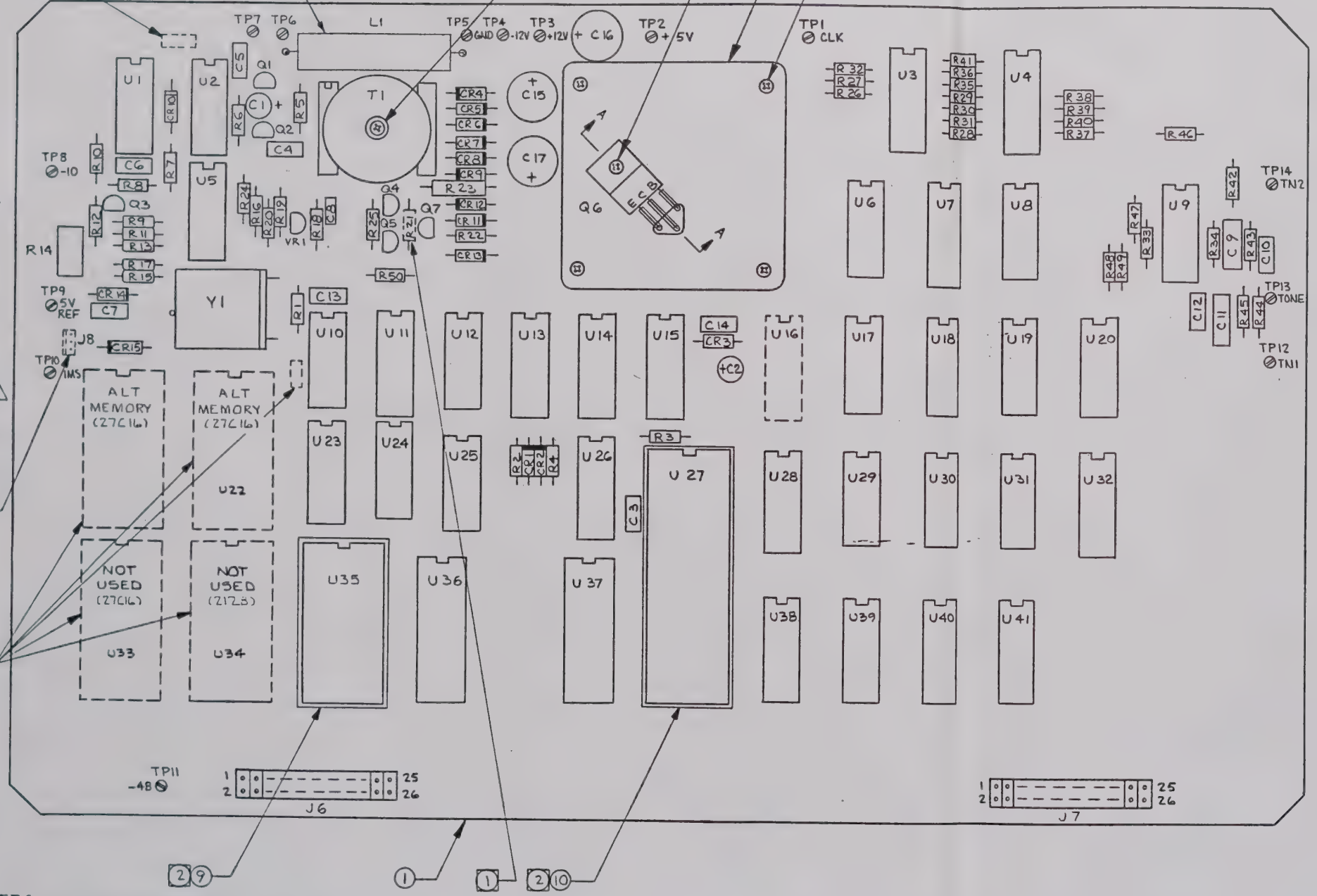
SCALE: 2/1
DATE: 5-14-81
APPROVED BY:
DRAWN BY J.SCOTT
REVISED

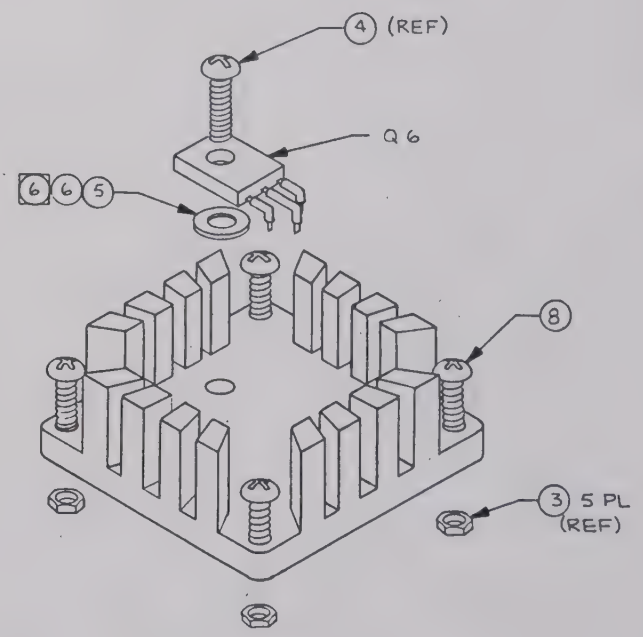
ASSEMBLY DRAWING
3144 INTERFACE

1902-0008-01.

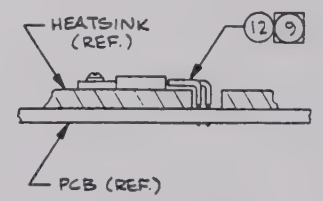
THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING				A	8/84						
FIELD USE INCH MM				REV B ECO 170	5/4/85						
LOCAL AND GENERAL NOTE USE INCH / MM				REV. C ECO 179	5/1/86						
				D PER ECO 195	4/22/86						
				E PER ECO 218	11/3/87						



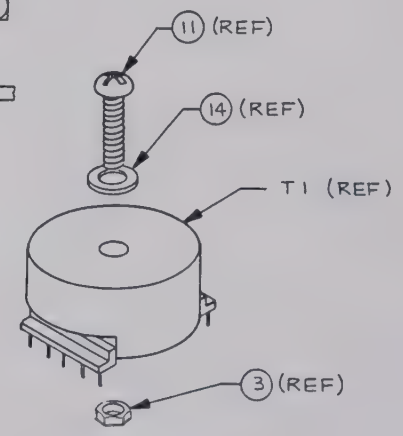




DETAIL "A" 4



VIEW A-A



DETAIL "B"

NOTES: UNLESS OTHERWISE SPECIFIED

1. INDICATED COMPONENTS ARE "SELECT AT TEST" COMPONENTS OR ARE NOT USED. SHOWN FOR REFERENCE ONLY.
2. DO NOT INSTALL U27 OR U35 IN SOCKETS UNTIL AFTER WAVE SOLDERING.
3. TRIM COMPONENT LEADS TO .060 INCH FROM BOARD SURFACE TO END OF LEAD EXCEPT I.C. LEADS.
4. ALL ITEMS IN DETAIL "A" TO BE ASSEMBLED TO BOARD AFTER WAVE SOLDERING.
5. SOLDER BUSS WIRE, ITEM (2), AS REQUIRED TO CRYSTAL, Y1, THEN TO BOARD AS SHOWN.
6. COAT WASHER, ITEM (5), ON BOTH SIDES WITH THERMALCOTE, ITEM (6), PRIOR TO INSTALLATION OF TRANSISTOR.
7. ORIENTATE CONNECTOR, J8, AS SHOWN.
8. INSTALL CR16, CR17 & C18 ON SOLDER SIDE OF BOARD WHERE SHOWN AFTER WAVE SOLDERING. ENSURE THAT LEADS ARE AS SHORT AND STRAIGHT AS POSSIBLE. INSULATE LEADS WITH TUBING, ITEM (12).
9. PRIOR TO ASSEMBLY OF Q6, INSTALL TUBING (ITEM 12) TO LEADS. TUBING SHOULD COVER THE LEADS AS SHOWN IN VIEW A-A TO PREVENT SHORTING OF LEADS TO HEATSINK.

USED ON MODEL 314 A 1 2

MATERIAL	TOLERANCES (UNLESS OTHERWISE NOTED)		SIGN-OFF BY	INITIAL	DATE
	U.S.	METRIC	DRAFTSPERSON	ASR	8/84
FINISH	XX ± —	XX ± —	DRAFTING CHECKER		
	XXX ± —	XXX ± —	ENGINEER APPROVAL		
	ANGLES ± —	—	PROJECT MANAGER		
	SCALE — (DO NOT SCALE DRAWING)	DRAWING LEVEL E	DRAFTING MANAGER		
	SHT 1 OF 1		ENGINEERING MANAGER		

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BERRY ELECTRONICS

TITLE: ASSEMBLY DWG. PROCESSOR BOARD

D P/N 1902-0016-01

INCH MM

THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING				REV A	2 FEB 84						
FIELD USE INCH MM				B	1/8/85						
LOCAL AND GENERAL NOTE USE INCH / MM				REV C ECO 120	4/3/85						
				D PER ECO 195	8/27/86						

SUPPLY AND GROUND PIN NO CHART				
IC NO	Vcc	GND	Vss	Vdd
4001			7	11
4068			7	14
4013			7	14
4042			8	16
4040	16	8		
1802	16		20	40
4049	1	8		
4028			8	16
4011			7	14
4556			8	16
LM 324	4	11		
4015			8	16
4030			7	14
4078	14	7		
4520			8	16
5101	22	8		
27C16	24	12		
27C32	24	12		

MATERIAL	TOLERANCES (UNLESS OTHERWISE NOTED)				SIGN-OFF BY	INITIAL	DATE
—	U.S.		METRIC		DRAFTSPERSON	SCOTT	6-31
FINISH	XX ±	—	XX ±	—	DRAFTING CHECKER	CARLSON	5-1-85
—	XXX ±	—	XXX ±	—	ENGINEER APPROVAL		
	ANGLES	—		—	PROJECT MANAGER		
	SCALE (DO NOT SCALE DRAWING)		DRAWING LEVEL		DRAFTING MANAGER		
	SHT 1 OF 2		D		ENGINEERING MANAGER		

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BERRY ELECTRONICS

TITLE: SCHEMATIC DWG
PART DESCRIPTION: 314 A L2 PROCESSOR

D P/N 1904-0016-01

THIRD ANGLE PROJECTION	TABULATED DASH NUMBER(S)	NEXT B/M P/N(S)	QTY	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE	E/C OR REVISION LEVEL	DATE	ENGINEER E/C APPROVAL	DATE
DUAL DIMENSIONING				REV A	2 FEB 84						
FIELD USE INCH MM				B	4/1/85						
LOCAL AND GENERAL NOTE USE INCH / MM				SEE SH1							

MATERIAL	TOLERANCES (UNLESS OTHERWISE NOTED)				SIGN-OFF BY	INITIAL	DATE
	U.S.		METRIC		DRAFTSPERSON	SCOTT	6-81
FINISH	XX ±	—	XX ±	—	DRAFTING CHECKER		
	XXX ±	—	XXX ±	—	ENGINEER APPROVAL		
	ANGLES °	—		—	PROJECT MANAGER		12-83
	SCALE — (DO NOT SCALE DRAWING)		DRAWING LEVEL		DRAFTING MANAGER		
	SHT 2 OF 2		D		ENGINEERING MANAGER		

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BERRY ELECTRONICS

TITLE: SCHEMATIC DWG

PART DESCRIPTION: 314A LZ PROCESSOR

D P/N 1904-0016-01

Document Title: Product Manuals	Document Number: ESC-0245-93-01
Revision Number: A X B_ C_ D_ E_	Page: N/A
Prepared By: Rick Schultz	Approved By: Jerry F Whatley JD
Issued By: Jim Steinau	Issue Date: 10/19/93

CHANGE NOTICE SUMMARY

Revision	Reason for Change	Date of Change
A	**INITIAL RELEASE** DON PERRITT STAFF ENGINEER Perritt	2/03/94